

In the Matter of:)
)
The Preparation of the 2005) Docket No. 04-IEP-1A
Integrated Energy Policy)
Report (Energy Report))
)

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

COMMISSIONERS PRESENT

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James Page

Ken Koyama

Charles Mizutani

David Maul

ALSO PRESENT

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BRI Energy

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BOSCH

Mike Eaves, CNGVC

APPEARANCES (continued)

ALSO PRESENT

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Jon Van Bogart
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Mike Kane

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1 P R O C E E D I N G S

2 MR. FONG: Before the workshop
3 officially begins. I would like to touch upon a
4 few administrative items here.

5 For those of you who want to make a
6 presentation or have an opportunity for public
7 comment, there is a set of blue cards in the
8 hearing room lobby. Please fill that out, provide
9 it to me, and I will see that Commissioner Geesman
10 gets that card, and during the workshop, he will
11 call you during the appropriate time.

12 If you have a business card, please
13 leave it in the tray that we set out on the lobby
14 table as well. There is a sign up sheet, if you
15 haven't signed that in the lobby, when you have an
16 opportunity to do so, please sign in, and then we
17 will have a record of your attendance here.

18 All of the presentations that will be
19 made during this workshop will posted on the
20 Energy Commission's website. I hope that we can
21 do that within a day or two of the conclusion of
22 today's workshop. You can find those
23 presentations under the 2005 Energy Report
24 information area on our website.

25 The transcript of today's workshop will

1 also be available. We will post that. We
2 normally get a transcript within ten working days
3 of the event.

4 If you weren't able to pick up a hard
5 copy of any of the presentation materials, leave
6 me a note, and I will have one sent to you.

7 Now for those workshop participants who
8 are on the phone, please try to minimize any
9 background noise that may be picked up by your
10 phone. If background noise or conversations
11 interrupt the workshop proceedings, we will
12 instruct the operator to mute your phone. This
13 option may then be restored during the appropriate
14 time of the workshop where we are taking comment
15 or questions from those who are listening on line.

16 With that, I'll turn this over to John
17 Geesman, Chair of the 2005 Energy Report
18 Committee.

19 PRESIDING MEMBER GEESMAN: We've got a
20 busy day, so I don't want to dwell too long on
21 remarks up here, but let me introduce my
22 colleagues. To my left Commissioner Jim Boyd, the
23 Associate Member of the Commission's 2005
24 Integrated Energy Policy Report Committee and the
25 Presiding Member of the Commission Transportation

1 Committee.

2 To his immediate left, Mike Smith his
3 staff advisor. To Mike's left, Commissioner
4 Jackalyne Pfannenstiel, the Associate Member of
5 the Commission Transportation Committee. To my
6 right, Melissa Jones, my staff advisor, and in the
7 audience, Commissioner Art Rosenfeld, the
8 President Member of the Commission R & D
9 Committee. I believe Commissioner Rosenfeld is
10 going to have some remarks for us in a couple of
11 minutes.

12 Commissioner Boyd, did you have anything
13 to lead off with.

14 COMMISSIONER BOYD: No, your advice is
15 good indifference to the long agenda, let's get
16 going.

17 PRESIDING MEMBER GEESMAN: Commissioner
18 Pfannenstiel.

19 COMMISSIONER PFANNENSTIEL: (Inaudible).

20 PRESIDING MEMBER GEESMAN: Commissioner
21 Rosenfeld, the microphone is yours.

22 COMMISSIONER ROSENFELD: Good morning,
23 Commissioners, and thank you for letting me sneak
24 in here. I won't be very long, but I wanted to
25 submit a two-pager and say one minute about a

1 pitch for it.

2 The topic is Pay as You Drive Automobile
3 Insurance, and I want to make the obvious point
4 that gasoline costs us, if we have a 25 mile per
5 gallon car, typically something on the order of
6 \$1,000 per year, a little more right now with high
7 prices. Automobile insurance is also \$1,000 a
8 year, it depends on your family and how many young
9 males you have.

10 There is a difference in the way people
11 think about it. Everybody thinks of gasoline as a
12 variable cost of something like 10 cents a mile.
13 Insurance, people tend to pay once a year. They
14 pay check off how many miles they drive, but they
15 think of it as a sum cost, and more or less they
16 are counterproductively, they think, well, I've
17 already paid for the insurance, so I won't add
18 that to the cost of driving a few miles to get a
19 pack a beer or cigarettes.

20 If people thought of insurance as a
21 variable cost, then it would be equivalent to a
22 couple of dollars a gallon extra, and it might
23 encourage people to do more ride pooling and less
24 miles per year.

25 There are two or three ways in which one

1 could do this. To some extent, the state can
2 already change one's ideas or work with the
3 insurance industry. Right now, some companies ask
4 you, but don't verify with the odometer, ask you
5 how many miles a year you drive. If it is less
6 than 7,500 miles a year, you get one rate quoted.
7 If it is more than 7,500, you get a higher rate.

8 Other companies are more conscientious.
9 I think the Automobile Club of Southern California
10 bends you down into slots as little as 2,500 miles
11 per year so that you might figure that is a
12 variable cost.

13 Many companies now are experimenting
14 with the idea that you actually get your odometer
15 read say once every three months at the local smog
16 check station, and then you get a true up of your
17 premium once every three months either in the form
18 of a bill from your insurance company for a little
19 extra if you have driven more than your average
20 mileage or a rebate if you've driven a little
21 less. So, it begins to get the idea across that
22 it is a variable cost.

23 There are quite a few companies in the
24 world who are now offering this, and I think it
25 would be interesting for the IEPR to recommend

1 this sort of analysis. That is the intermediate
2 case.

3 The extreme case which is controversial
4 and may have left a bad taste in people's memory
5 to mix metaphors is "Pay at the Pump". Pay at the
6 Pump for your insurance would be somewhat
7 different because drivers of inefficient cars
8 would pay more and then conceivably get a rebate,
9 but it would be even more visible.

10 The trouble with that is it came out in
11 the form of a proposition say ten or fifteen years
12 ago which got voted down, and I think that is
13 perhaps a little extreme for what I am doing now.
14 So, this is a plea in the middle, and I guess
15 basically my concluding phrase is, almost
16 everything we do these days, if you take a taxi,
17 you certainly expect to pay for the mile and not
18 just a lump sum. It would be, I think, fruitful
19 if the same thing could happen with insurance.

20 Chris Kavalec, who is here today did
21 some analysis which suggests that if people
22 thought of driving as a little more expensive than
23 it is now because of insurance, they would drive
24 something like 10 percent less, which would be a
25 lot of miles per gallon at almost no cost to

1 society, some increase of business at the smog
2 checker.

3 So, I have very briefly summarized my
4 two-pager, and I thank you very much unless you
5 have questions or comments.

6 PRESIDING MEMBER GEESMAN: Thank you,
7 Commissioner, and we will docket your two-page
8 submittal and pursue it further as we move down
9 the calendar with this.

10 COMMISSIONER ROSENFELD: Thank you very
11 much.

12 PRESIDING MEMBER GEESMAN: Thanks, Art.
13 Dan, why don't we go right ahead to the first
14 staff presentation.

15 MR. FONG: Okay. Chris Kavalec of our
16 Transportation Fields Office will provide an
17 overview of the staff's paper on forecasts for
18 transportation energy demand.

19 MR. KAVALEC: Good morning. Today I am
20 going to describe our most recent transportation
21 energy forecast that was undertaken for the 2005
22 Integrated Energy Policy Report and which will
23 serve as a reference point for some of the
24 analysis you are going to hear about today.

25 The forecast covers these fuel types and

1 sectors, the fuel types there on the left, the big
2 three in terms of use being gasoline, diesel, and
3 commercial jet fuel. On the right hand side, the
4 sectors or different uses that our forecast
5 covers.

6 The models that we use in the forecast,
7 first CALCARS for light duty vehicles. This is a
8 vehicle choice and usage model that's based on a
9 2002 survey of households and commercial fleets in
10 California.

11 The survey explicitly explored
12 preferences for diesel and hybrid vehicles, which
13 is why we are able to include diesel and hybrid
14 light duty vehicles in our forecast now.

15 The freight model for goods movement,
16 and this is a model that uses economic activity by
17 sector. For example, a sector would be services
18 to predict freight movements.

19 Then we have the aviation model for
20 commercial aviation and this model is driven by
21 projections by airline passenger trips which are a
22 function of income, population, and costs.

23 Some of the key assumptions that went
24 into this, first fuel prices. Gasoline and diesel
25 prices come from the most recent energy

1 information administration crude oil price
2 forecast. This was turned into a California
3 forecast for fuels by using historically retail
4 and wholesale margins.

5 A little bit over \$2.00 in 2004,
6 increasing to about \$2.25 by the end of the
7 forecast period for gasoline, a few cents less for
8 diesel.

9 As we know, prices are a little bit
10 higher than that now, and we also have an
11 alternative higher price scenario which I will
12 talk about in a minute.

13 PRESIDING MEMBER GEESMAN: Chris, do you
14 have a comparable historic price series for
15 California fuel prices going back in time?

16 MR. KVALEC: Yes, I do -- well, not
17 with me, but we do in the office, yes.

18 PRESIDING MEMBER GEESMAN: It strikes
19 me, and I frankly have looked ahead, so I know
20 what you are going to show for your so-called high
21 price, but it strikes me that in all of your
22 projections, you are looking at the effectively
23 declining real prices for fuel over the forecast
24 period.

25 I am wondering if it might not be

1 beneficial to go back perhaps as far back as the
2 early 1970's and try and identify similar time
3 series of ten or twenty years when we have been
4 anticipating the same magnitude of real price
5 decline that even your high price scenario is
6 going to show.

7 I recognize that you basically set a
8 point on a graph at the end of the forecast period
9 and draw your slope between those two points, and
10 that encompasses a great deal of a price
11 volatility in between the points, but I think from
12 a historic comparison standpoint, it would be a
13 valuable illumination to show us.

14 MR. KAVALEC: I guess I am not sure what
15 you are asking for. Using the historical prices
16 to look at the trend in terms of --

17 PRESIDING MEMBER GEESMAN: In terms of
18 your anticipated real price decline, does this
19 look like the period between 1973 and 1993 or the
20 period between 1979 and 1999 or perhaps the period
21 between 1982 and 2002? Have we been here before,
22 and what bumps along the road did we experience in
23 those prior 20 year periods?

24 MR. KAVALEC: Okay. The jet fuel prices
25 are based on the most recent FAA forecasts. Below

1 that, you see some econ demo rates, the key one
2 here is population which is lower than the
3 previous Department of Finance Projections that we
4 use in the 2003 forecast.

5 PRESIDING MEMBER GEESMAN: Let me ask
6 you there, and we got into this a bit yesterday.
7 I guess to me one of the principle outputs of this
8 efforts, is in assessing our infrastructure needs.
9 Can your forecast model allow for differing
10 regional population growth assumptions, or are you
11 stuck with a single statewide growth number.

12 MR. KAVALEC: No, our models are build
13 to forecast for different -- we have five
14 different regions: LA, San Diego, the Bay Area,
15 Sacramento, and the rest of California. It would
16 just require assembling the proper demographic
17 data, and we would be able to do it. We haven't
18 done it for this report.

19 PRESIDING MEMBER GEESMAN: I understand.
20 We are going to get into this in some level of
21 detail when we take up our electricity demand
22 forecast, and I think that to the extent that we
23 accomplish it within the time frame we've allowed,
24 whatever we do in the electricity area that
25 relates to population growth assumptions, we ought

1 to try and mirror on our transportation forecast
2 as well.

3 MR. KAVALEC: Yeah, in fact, that is the
4 way the regions are set up based on utilities.
5 That is how they came about in the first place
6 because when we always did regional forecasts, we
7 did one consistent with what the electricity
8 office was doing.

9 COMMISSIONER BOYD: Chris, while we are
10 on the subject, I didn't broach this yesterday,
11 but I believe I have broached it in committee
12 meetings here before. Before we put this issue to
13 bed, I would like to see the population forecast
14 for the major metropolitan areas of the state that
15 are done by the local regions of (indiscernible),
16 like SCAG, ABAG, and even for Sacramento SACOG as
17 contrasted with the Department of Finance
18 projections.

19 I know traditionally historically almost
20 legally, we have to use the Department of Finance,
21 but I would like to see the comparison. It has
22 been a few years since I've done that comparison,
23 and in the past, there were pretty wide variances
24 in the estimates made at the state level and made
25 by the Regional Counsel of Governments, which if

1 my memory serves me right, and it doesn't always
2 do that anymore, the Counsels of Government did a
3 better job of forecasting what was really
4 happening in their regions, vis a vis the state.

5 In any event, this is going to affect
6 our population projections everywhere, and I might
7 as well get the question on the table to the
8 Staff, to Rosella and her crew to at least show us
9 the differences if there are any differences.

10 MR. KAVALEC: So, you are asking to put
11 together a little bit of information about the
12 different forecasts and compare them?

13 COMMISSIONER BOYD: Yes.

14 MR. KAVALEC: Okay.

15 PRESIDING MEMBER GEESMAN: Let me say,
16 Commissioner, I'm not going to find myself legally
17 constrained to the Department of Finance forecast,
18 I doubt you will either.

19 COMMISSIONER BOYD: Yeah, I've been too
20 constrained by them too much of my life, so it is
21 about time to break. We did once, and we can do
22 it again.

23 MR. KAVALEC: Here's what the prices
24 look like, diesel just a bit below gasoline. S

25 Some more key assumptions. The forecast

1 for hybrid vehicles are consistent with what the
2 Air Resources Board expects to be on the road so
3 that auto manufacturers can meet the zero emission
4 vehicle regulations.

5 Our experts tell us that diesel light
6 duty vehicles are going to be available starting
7 in 2008, and we have two main forecasts here. A
8 base case forecast that assumes implementation of
9 the green house gas regulations from Pavley and an
10 alternate forecast that doesn't.

11 Some particulars on the results. In the
12 base case, which includes the greenhouse gas
13 regulations, almost no growth in gasoline demand,
14 a 0.1 percent per year, and a growth rate on
15 average on a little bit less than 1 percent per
16 year in the alternative case.

17 Diesel and jet fuel demand grow by a
18 little bit less than 3 percent on average
19 throughout the forecast period. Average fuel
20 efficiency rises by about 33 percent over the
21 forecast period in the base case due to the
22 greenhouse gas regulations and by 10 percent in
23 the alternative case.

24 Overall the growth in refined fuels
25 which is jet fuel, diesel, and gasoline rises by

1 an average of around 1 percent per year in the
2 base case and a 1 1/2 percent in the alternative
3 case.

4 PRESIDING MEMBER GEESMAN: Now, in your
5 alternative case, the .9 percent annual growth
6 rate in gasoline demand, yesterday we were told
7 that the Energy Information Administration, an arm
8 of DOE, is projecting a gasoline demand growth, I
9 believe they said of 1.9 percent per year in the
10 PADD 5 region. Could you provide an explanation
11 of what the most salient differences between those
12 two forecasts are?

13 MR. KAVALEC: The growth rate they
14 projected for gasoline was 1.7 percent. It was
15 1.9 percent for all refined fuels, but the major
16 difference is population. They use a higher
17 population growth rate. They also don't project
18 as many hybrids and as many diesels.

19 PRESIDING MEMBER GEESMAN: Okay.

20 MR. KAVALEC: Here is a look at the
21 results in graph form. Gasoline demand at the
22 top, you can see how in the base case gasoline
23 demand flattens and even begins to decline before
24 it starts to rise towards the end of the forecast
25 period.

1 By 2025, you have over a 2 billion
2 gallon difference between the two forecasts. At
3 the bottom, we have jet fuel and diesel. The
4 diesel shown here is from the base case forecast.
5 In the alternate case, the alternate forecast,
6 diesel is a little bit higher because in the base
7 case, diesel fuel efficiency rises as well as
8 gasoline fuel efficiency due to the greenhouse gas
9 regulations. They are so close that I didn't
10 include both of them in this graph.

11 The next slide shows the impact of
12 hybrid and light duty diesel vehicles on gasoline
13 demand in our forecast. The top curve shows what
14 gasoline demand would be without diesel and
15 hybrids.

16 The lower curve shows what happens when
17 you include diesel and hybrids, and it is the same
18 as our alternative forecast.

19 COMMISSIONER PFANNENSTIEL: Excuse me,
20 Chris, I may have missed this if you said it
21 before, what kind of saturation are we expecting
22 to get from hybrids and diesels in these out
23 years?

24 MR. KVALEC: Sales of diesel in our
25 forecast reach around 150,000 by 2015 and over

1 300,000 by 2025. Hybrids reach 200,000 in sales
2 in our forecast by 2015 and about 250,000 by 2025.

3 COMMISSIONER PFANNENSTIEL: About what
4 percent of the fleet would those represent about?

5 MR. KAVALEC: Total new sales by 2015
6 are close to 2 million, so we are talking about 15
7 to 25 percent here.

8 COMMISSIONER PFANNENSTIEL: Of new
9 sales?

10 MR. KAVALEC: Right. Some other results
11 to note, on road vehicle miles traveled is
12 projected to rise by 1 3/4 percent per year in the
13 base forecast and a little bit less in the
14 alternate case.

15 The reason it is higher in the base case
16 is because of the higher fuel efficiency, which
17 lowers the costs of driving and results in more
18 driving.

19 PRESIDING MEMBER GEESMAN: How did you
20 derive your VMT projections, what is the origin of
21 the assumptions you are using there to determine
22 VMT?

23 MR. KAVALEC: Most of the VMT comes from
24 light duty vehicle, and that is based on household
25 level decisions for how much to drive in a year.

1 That is determined by the amount of income you
2 make, the amount of people in your family, and it
3 is also determined by the cost per mile of
4 driving, so that is how that comes in.

5 PRESIDING MEMBER GEESMAN: We used to do
6 survey or rely on surveys to inform our VMT
7 assumptions?

8 MR. KAVALEC: Yeah, in fact, the VMT
9 model that is part of CALCARS comes from survey
10 results where people are asked how much they drive
11 in a given year.

12 PRESIDING MEMBER GEESMAN: What is the
13 vintage of the most recent survey that CALCARS is
14 using?

15 MR. KAVALEC: 2002.

16 PRESIDING MEMBER GEESMAN: It is a
17 reasonable current projection, although it is a
18 pre-price run up.

19 MR. KAVALEC: Right. It is also I
20 should say based on information that people had
21 about diesels and hybrids and impressions that
22 they had about those vehicles three years ago
23 which may have changed now.

24 COMMISSIONER PFANNENSTIEL: Chris, you
25 clearly have a rebound effect in there for the

1 amount additional they will drive for a more
2 efficient car. How much is that rebound effect?

3 MR. KAVALEC: It is about 15 percent.
4 So, if you were to raise costs by 100 percent,
5 people would drive 15 percent less is what that
6 means.

7 The number of on road vehicles is
8 projected to rise by around 1 1/2 percent per year
9 in both forecasts. This is all vehicles: light,
10 medium, and heavy duty. This means in numbers 25
11 million to around 35 million by 2025.

12 Transportation electricity use is
13 projected to grow from 600 million KWh to about
14 tripe that by 2025, and this comes from growth in
15 transit.

16 Natural gas demand for on road vehicles
17 is projected to increase from 75 million therms to
18 around 200 million therms by the end of the
19 forecast period. This comes mainly from a
20 doubling of the amount of busses, natural gas
21 busses out there as well as an increase in heavy
22 duty truck penetration by natural gas vehicles,
23 for example, for trash trucks.

24 PRESIDING MEMBER GEESMAN: If I am not
25 mistaken, that still represents a trivial amount

1 of total natural gas consumption in this state?

2 MR. KAVALEC: Yeah, I don't have the
3 numbers here, but it is less than 5 percent.

4 PRESIDING MEMBER GEESMAN: Yeah.

5 MR. KAVALEC: Comparison with our last
6 forecast. The thing to note here is that gasoline
7 growth is lower, and that is not just in the base
8 case, but the alternative case as well. This
9 gives the reasons, and we've talked a little bit
10 about this earlier.

11 Lower projected population growth, a
12 little bit over 1.1 percent per year in this
13 forecast versus around 1 1/2 percent per year in
14 the 2003 forecast.

15 More light duty diesel vehicle sales.
16 Our experts tell us that auto makers are more
17 bullish on diesel vehicles and will offer plenty
18 of choices beginning in 2008.

19 There is a slight increase in fuel
20 efficiency for conventional gasoline vehicles that
21 happens even without the greenhouse gas
22 regulations. This comes from our expert
23 consultant who tells us that manufacturers will
24 implement certain technologies and incorporate
25 them in their vehicle offerings over the forecast

1 period.

2 We also ran some alternative price
3 scenarios, and the three here are referred to as
4 high base gasoline price, which we have been
5 talking about and the low gasoline price. The
6 high and the low are based on two other forecasts
7 from the Energy Information Administration on
8 crude oil prices.

9 In the high case, we reach \$2.49 a
10 gallon by 2025. The base price is \$2.25, and then
11 the low gasoline price declines initially and then
12 only reaches \$1.92 by the end of the forecast
13 period.

14 This next slide shows the impact of
15 prices on the base case forecast of gasoline plus
16 diesel. We can use these curves to talk a little
17 bit about the impact of prices on gasoline demand
18 using, for example, the base price or higher price
19 as it is referred to here, versus the highest
20 price in 2025.

21 What we have is basically a 10 percent
22 increase in price and a 1 percent reduction in
23 gasoline demand. In other words, your elasticity
24 is around 10 percent.

25 The impact of the prices on the

1 alternative forecast of gasoline plus diesel.
2 What is interesting to note about this one is
3 there is a larger impact from the increase in
4 gasoline prices. The reason for that is auto
5 manufacturers respond to this higher price, this
6 is a higher natural price, by improving fuel
7 efficiency slightly in their vehicles, so that
8 using the same two forecasts here, our higher
9 price or base versus the highest price, the
10 reduction in gasoline demand is 2 percent rather
11 than 1 percent. It doubles. That is because of
12 the improved fuel efficiency offered by
13 manufacturers.

14 That doesn't happen in the base case
15 because they have already increased fuel
16 efficiency to meet the greenhouse gas regulations,
17 and it is not profitable for them to raise fuel
18 efficiency by any more than that.

19 PRESIDING MEMBER GEESMAN: What would
20 happen if you trued up the beginning of that
21 curve, but that the left hand side of it to
22 today's price? My understanding is that your fuel
23 prices are backed into by our world oil model, so
24 I presume that we wouldn't change much in our
25 world oil price projection out over the period.

1 If you started with retail fuel prices at 2005
2 levels, would the slope of your curves be anywhere
3 approaching that magnitude.

4 The average price this year has been
5 \$2.25 so far for regular gasoline, and we are
6 using in 2005 around \$2.16, so you have a 10 cent
7 difference or roughly a 5 percent increase in
8 price. So, based on the elasticity that I just
9 talked about, you have roughly a half percent drop
10 in gasoline demand. I don't know if that was your
11 question.

12 PRESIDING MEMBER GEESMAN: Chris, these
13 are the US average numbers or California?

14 MR. KAVALEC: This is a world crude oil
15 price matched to or used to produce a California
16 gasoline and diesel fuel price by using retail and
17 wholesale margins in California.

18 That concludes my presentation, and I
19 will be happy to take any other questions.

20 PRESIDING MEMBER GEESMAN: One last try,
21 Chris. The average price thus far has been \$2.25
22 this year?

23 MR. KAVALEC: Right.

24 PRESIDING MEMBER GEESMAN: How do you
25 derive that?

1 MR. KAVALEC: That --

2 PRESIDING MEMBER GEESMAN: I would wager
3 that I drive more than anybody else in the room,
4 and I don't think I've seen \$2.25 all year, let
5 alone average that.

6 MR. PAGE: This is Jim Page at the
7 Energy Commission. Averaging the US EIA's retail
8 price forecast for California for this year comes
9 to \$2.25.

10 PRESIDING MEMBER GEESMAN: The average
11 forecast price?

12 MR. PAGE: No, the average real price.

13 PRESIDING MEMBER GEESMAN: That is a
14 major difference.

15 MR. PAGE: No, it is not a forecasted
16 price. It is the actual historical price for this
17 year is \$2.25. It was very low at the beginning
18 of the year, relatively low. Not by historical
19 standards, but closer to \$2.00 certainly.

20 PRESIDING MEMBER GEESMAN: Sounds like
21 EPA mileage statistics to me.

22 COMMISSIONER BOYD: I have to agree --

23 MR. PAGE: (Inaudible) numbers.

24 COMMISSIONER BOYD: -- I have been
25 struggling with this for weeks not just minutes

1 here. I, like Commissioner Geesman, have
2 struggled to find gasoline on average that
3 inexpensive in California.

4 MR. PAGE: You have to remember it has
5 been 5 1/2 months, and we did start much lower in
6 this winter, and it averaged for 2005, January
7 through May. I can check the numbers again and
8 provide you with statistics.

9 PRESIDING MEMBER GEESMAN: I would
10 invite any of the California retail market
11 representatives if they have better statistics to
12 provide those to our record so that we can make
13 some comparison. I am hesitant to base policy on
14 anecdote even when it is my own anecdote.

15 MR. KAVALEC: Okay, thank you.

16 MR. KOYAMA: Good morning, I am Ken
17 Koyama with the Transportation Energy Division of
18 Fuels and Transportation Division.

19 My presentation today is to give a
20 little summary of all the stakeholder meetings
21 we've had with the alternative fuels groups over
22 the past 18 months.

23 We were able to meet with them in a
24 series of meetings, and what I am going to present
25 here are some of the results of those meetings.

1 This is in our report on the Alternative Fuels
2 Commercialization, and let me just say I want to
3 acknowledge the editors I've had with this report
4 and in particular, Elizabeth Parkhurst, who passed
5 away a couple of weeks ago. She provided some of
6 the strongest comments and questions and made sure
7 that the report got tightened up, so I wanted to
8 make sure I acknowledge that.

9 Our focus of this report is on the
10 acceleration for commercializing alternative
11 fuels, and it is based on the stakeholder
12 recommendations as I indicated earlier.

13 Let me just remind people that our goals
14 that were adopted back in 2003 for non-petroleum
15 fuels was to achieve 20 percent of transportation
16 energy demand by 2020. Our current displacement
17 is about 6 percent. If we meet our 20 percent
18 goal in 2020, that means we will be displacing
19 about 4 to 4.2 billion gallons of gasoline and
20 diesel.

21 Where are we now? We are actually doing
22 fairly well amongst all other states as far as
23 having alternative fuel vehicles. We top the list
24 by quite a bit over Texas. This is using 2002
25 data I suspect or even have a broader wider margin

1 now than back in 2002.

2 Our fuel station top ten list, we are
3 also on the top of that as well. We conducted a
4 number of stakeholder meetings. We got about 100
5 representatives at fuel stakeholders from the
6 different alternative fuels. These were all
7 chaired by Dan. We asked the stakeholders for
8 recommendations to how we can promote alternative
9 fuels to a wider commercial base.

10 Then we asked the stakeholders what they
11 project is their potential fuel market for their
12 alternative fuels. The alternative fuels that we
13 looked were bio-diesel, electricity, ethanol, gas
14 to liquids, hydrogen, liquified petroleum gas, and
15 natural gas.

16 In the report, we talk about each of the
17 stakeholder issues within each of the alternative
18 fuels, but to just kind of boil it down to the
19 final chart that we show, these are the
20 stakeholder projections. This may not be
21 consistent with the demand forecast that you saw
22 earlier, but again, these are the projections, the
23 numbers that were given to us by the stakeholders.

24 You can see that for our goal of meeting
25 2020 of about 4 billion gallons -- I see we need

1 to straighten out that little typo at the bottom.

2 All of the stakeholder projections are met, we
3 would be well over what our goals were for 2020.

4 We asked the stakeholders what kind of
5 barriers are they going to face in meeting their
6 projections, and they indicated several of them.
7 Number one, of course, is that petroleum fuels is
8 a formidable competitor. Wherever improvements
9 have occurred in alternative fuels, petroleum
10 fuels seem to answer and very strongly answer the
11 challenge.

12 There is apparently a lack of clear and
13 consistent policies according to some of the
14 stakeholders, and then some of the manufacturers,
15 the vehicle manufacturers have yet to accept the
16 fuel or fuel blends for their vehicles. Some of
17 them have issued warranty warnings if they use a
18 particular blend or fuel in their vehicles.

19 Some of the certification procedures in
20 putting these alternative fuels on the road has
21 been a problem, again, for some of the alternative
22 fuels. There needs to be additional technology
23 development and infrastructure development for
24 several of the alternative fuels as well.

25 The projections assume certain events

1 will take place, the stakeholder projections
2 assume certain events will take place such as the
3 ethanol industry wants a higher blend of gasoline
4 with ethanol, but will it ever be acceptable to
5 California, that is a big question mark.

6 The gas to liquids folks have suggested
7 that they would be happy to supply GTL to
8 California provided that there was enough demand
9 on the diesel side for GTL basically. So, the
10 question is, is diesel demand ever going to be
11 high enough to attract GTL suppliers or will we
12 still use traditional sources of diesel. For
13 example, if light duty diesel becomes a widely
14 used vehicle in California.

15 Hydrogen technology is a big question
16 mark because of the break throughs necessary to
17 commercialize this fuel. We've seen indications
18 that there has to be four or five major
19 technological break throughs in order for hydrogen
20 to become commercialized in California or anywhere
21 else.

22 There are more questions. There is a
23 growing population of FFVs, will suppliers of the
24 E85 take advantage of this apparently ready-made
25 market and have E85 stations similar to what is

1 going on in the Midwest here in California and
2 strongly advertise that there is E85 here as a
3 fuel that could potentially be cheaper than
4 gasoline.

5 There is a big question mark about on
6 the light-duty side, whether alternative fuel
7 vehicles, other alternative fuel vehicles, other
8 than FFVs become instinct since several
9 manufacturers declared that they will no longer
10 produce these alternative fuel vehicles. So,
11 those are some of the major questions that are
12 facing the stakeholder groups here in California.

13 They do make several recommendations.
14 One is to adopt clear policies for petroleum
15 reduction, such as codifying the petroleum
16 reduction goals as adopted here in 2003.

17 They would like to see some help in
18 resolving the regulatory barriers that some of the
19 alternative fuels face here in California in order
20 to become wider spread alternative fuel.

21 They would like to see an alternative
22 incentive program similar to Moyer type program,
23 but only for petroleum displacement.

24 They also ask for the government to be
25 early adopters, to be the pace setters for buying

1 a lot of these vehicles. The final two, not
2 strongly highlighted by the stakeholders,
3 mentioned cursorily, but certainly an important
4 factor in the development of alternative fuel
5 vehicle and commercializations.

6 One is for incentives for additional
7 infrastructure development, and the second is for
8 assistance in technology development and research
9 and development activities.

10 Our staff conclusion is that it is going
11 to be difficult meeting the 2020 goals because
12 there are significant barriers facing all of the
13 stakeholders and those of us who are working
14 towards achieving the 2020 goals. That the
15 implementation of these recommendations, many of
16 these recommendations probably need to happen
17 fairly quickly now if not sooner.

18 That is the end of my presentation.
19 Thank you.

20 PRESIDING MEMBER GEESMAN: Are we going
21 to hear from either your staff or the air quality
22 agencies on issues surrounding E10, or did we just
23 hear that.

24 MR. FONG: We are not planning to
25 discuss specific barriers for the various

1 alternative fuels. I am hopeful that some of the
2 stakeholders who have expressed a desire to speak
3 will address some of these issues when they make
4 their presentations or remarks. The staff is
5 pursuing a separate set of meetings with ARB staff
6 for instance to discuss the potential for increase
7 cooperation between our agencies so that we send a
8 clear message to all the various alternative fuel
9 stakeholders on our alternative fuel policy.

10 We hope to work with ARB staff to better
11 understand some of the air quality issues that
12 they are focusing on and how we might resolve some
13 of those air quality issues to make it easier for
14 these alternative fuels to enter the market place.

15 PRESIDING MEMBER GEESMAN: I think that
16 is terrific, and I am all in favor of cooperative
17 efforts and also in better informing stakeholders,
18 but why don't you focus on the five stakeholders
19 that are commissioners and try to better inform me
20 as to what exactly the challenges to a higher
21 ethanol blend are and how to reconcile those
22 challenges with current California air quality
23 standards or current California air quality
24 modeling efforts.

25 MR. FONG: We will do that.

1 MR. MIZUTANI: Commissioner Geesman,
2 this is Chuck Mizutani from the Energy Commission.
3 Dan mentioned that we are in the process of having
4 meetings with the ARB staff on alternative fuels
5 and air quality.

6 PRESIDING MEMBER GEESMAN: Yeah, but
7 you've been in the process of that since this
8 committee started a year ago.

9 MR. MIZUTANI: Yeah, but the other thing
10 we are meeting on is try to hold a workshop in a
11 month or so on that particular specific topic.

12 PRESIDING MEMBER GEESMAN: Okay, I think
13 that is a good idea. Let's make certain that
14 happens before the end of June. I've heard this
15 same suggestion for I think the past five or six
16 months, and I think our opportunity for
17 establishing a public record is starting to slip
18 from our fingers, so I would like to make certain
19 that happens in a timely fashion. I am a little
20 concerned that it hasn't happened thus far.

21 MR. MIZUTANI: Okay.

22 PRESIDING MEMBER GEESMAN: I would also
23 encourage you to include the South Coast Air
24 Quality Management District in such a workshop and
25 in your discussions, which is something as you

1 will recall I've encouraged you to do for about
2 the last year.

3 MR. MIZUTANI: Yes, Commissioner.

4 MR. FONG: Are there any other questions
5 regarding Ken Koyama's presentation? If not, we
6 will proceed to the next staff presentation.

7 MR. MAUL: Good morning, Commissioners,
8 I am David Maul, the Manager of the Natural Gas
9 and Special Projects Office, and I am here today
10 to talk about a topic in the special projects side
11 of my office.

12 Nancy McKeever is on your agenda, and I
13 would like to do my best impression of her, but I
14 just won't. So, I will just give it myself.

15 We are here today to talk about land use
16 planning and energy demand and looking at ways to
17 improve the land use planning process to achieve
18 not only demand, transportation energy demand
19 reductions, but also other significant
20 environmental benefits and clean air quality
21 benefits.

22 Let me start today's quick presentation
23 with an image, an image to me that is fairly
24 striking and you may in the audience, you may look
25 at that and see things that are familiar to you

1 that are somewhat confusing regarding
2 transportation.

3 You may have been stuck in that traffic
4 there yourself. When I look at those images, I
5 see something completely different. I see
6 embedded energy demand choices. The choices on
7 the left hand side between great traffic
8 congestion and the very top on the right hand side
9 an area where you can live and not have to drive
10 your car.

11 I see on the top left people using a
12 tremendous amount of gasoline or diesel every
13 single day just to do their daily lives, that is
14 drive from where they live to where they work or
15 drive to the retail markets.

16 On the right hand side, I see a
17 situation where people can live and walk to where
18 they can buy or where they can work. On the
19 bottom side, again, I see a mixed use of
20 transportation on the left hand side. On the
21 right hand side, I see a land use planning network
22 of homes and living situations that require you to
23 drive considerable distance to your employment and
24 the places where you purchase your materials.

25 These are transportation choices that

1 are very important from an energy perspective in
2 that they have embedded long term energy demand
3 implications if you look at one versus the other.
4 There are things that we can do about that, and we
5 can look specifically at the role of fuel demand
6 in the land use planning process.

7 To date, there is no direct correlation
8 or consideration of fuel demand planning in the
9 land use transportation planning process. We are
10 about ready to make a change in that area. We
11 have been working hard for many years in this
12 area, and I think we are about ready to make some
13 significant break throughs, and we have some good
14 individual pilot studies that show the value of
15 those breakthroughs.

16 At least from what we have seen so far
17 in the modeling studies we've done and the actual
18 practice in the communities, we feel that land use
19 choices really determine the transportation system
20 that is developed later to provide the mobility
21 and VMT that community needs.

22 If you establish the land use planning
23 network properly up front, you can significantly
24 reduce the amount of VMT that have to travel, and
25 therefore the long term transportation demand.

1 In order to do that, given our current
2 level of land use planning processes, it is
3 important that the land use planning decisions
4 makers have the appropriate information and the
5 appropriate models to understand the differences
6 in those two choices and be able to incorporate
7 that in a land use planning process.

8 The program we developed many years ago
9 called places are now called I-Places because it
10 is on the internet have done some pilot cases
11 throughout California, most recently here in
12 Sacramento as well as San Louis Obispo, and in
13 those pilot cases, we found that local citizens in
14 the planning process actually benefit and want and
15 desire to have the kind of information that is
16 being provided by the I-Places program as
17 implemented by local land use planning decision
18 makers.

19 These are relatively simple models to
20 use, they are very complex models to develop and
21 very data intensive, but the process we've
22 developed, the engine we've developed at the
23 Energy Commission to be used by local
24 transportation planning organizations and land use
25 planning organizations actually is relatively easy

1 to use in a workshop format much like this.

2 What we find then is that the decision
3 makers, that is local city counsel members, local
4 county Board of Supervisor members, or local
5 regional planning folks get the information they
6 need to understand the difference between a land
7 use plan that is predominantly residential
8 oriented with single family dwellings and arterial
9 streets and freeways versus one that might be mix
10 use that is actually more amenable to what people
11 want to live in.

12 We find that the kind of land use
13 choices that I had shown earlier are actually more
14 desired by a lot of buyers when they get into
15 these kind of communities as had been envisioned
16 both in Europe, Portland, other areas around the
17 US where people when they have a choice to buy
18 into a housing community, they actually prefer the
19 mix use type housing community.

20 Therefore the process that drives all
21 this at the up front is an information based
22 process that has a fairly analytical foundation to
23 it, and if we can provide that kind of information
24 and analytical process that can provide some
25 objective evaluation of choices, we believe that

1 more informed policy choices and more informed
2 decision makers will actually result in choices
3 that can reduce energy demand significantly and
4 also provide significant air quality benefits.

5 This is the implementation here in
6 Sacramento. This is called the Blueprint Project.
7 If you live here in the Sacramento area, you may
8 have heard about this. This was implemented by
9 the SACOG, the Sacramento Area Regional Council of
10 Governments.

11 For the last several years, it was a two
12 year process, these kinds of maps were shown in a
13 number of local workshops. It was a two year
14 process involving six counties, fifty workshops
15 throughout the entire six county area, over 3,000
16 local citizens participated in this process
17 looking at these kinds of maps, going back with
18 pencils and blue markers, making changes and
19 identifying what they were the most important, the
20 least important areas for land use development.

21 With this kind of process, this is all
22 done on a computer in the I-Places model that we
23 developed, and people can instantly see what might
24 happen from a land use perspective, an economic
25 perspective, tax base perspective, air quality,

1 energy, a number of key parameters. If you were
2 to make choices of say putting additional
3 development in let's say the area north of
4 Woodland versus concentrating your development in
5 Woodland or developing more going east of Highway
6 50 or trying to concentrate in downtown
7 Sacramento.

8 Those kind of choices can be instantly,
9 literally instantly put, on the computer, can be
10 redone with 15 to 20 seconds, you can redo another
11 map like this showing the choices and the
12 preferences of the citizen groups that are in
13 these workshops.

14 You can also instantly calculate back
15 out the differences in air quality and land use
16 and transportation fuels, demand characteristics
17 of the two different choices.

18 That kind of information based fully
19 transparent process that is a workshop process,
20 driven by the engine that we have here with I-
21 Places has shown to be very affective and has
22 resulted in the adoption of the Blueprint process,
23 which I might say has gotten a number of major
24 awards, both nationally as well as in the state
25 here.

1 The two choices that we looked at in the
2 I-Places program for the Blueprint Program
3 identified that if you had a preferred alternative
4 versus the base case alternative, the difference
5 between those two alternatives saved you over 75
6 million gallons per year of gasoline every single
7 year or a savings of \$180 million kept in the
8 local Sacramento area for many years to come.
9 That to us was a significant savings.

10 However, more action is needed. As I
11 said, these are only pilot programs we have
12 identified, we have implemented, they do work, but
13 the problem now is how to get the rest of
14 California to adopt these same things.

15 We have been working with other
16 metropolitan planning organizations throughout
17 California. They have a lot of interest, and so
18 this is really a demand driven program. The
19 customer, that is, the regional planning
20 organization wants to use this, local air
21 districts want to use this.

22 As an example, just in the last week and
23 a half, we were able to find some additional money
24 to keep the I-Places program available on the
25 internet for the next six months, and our local

1 partner here at the local air district within a
2 week was able to find matching money to make sure
3 it was available for the entire year.

4 So, the local air districts, the local
5 planning organizations do have a lot of interest
6 in this particular program, but more work is
7 needed.

8 We think more work needs to be done at
9 the statewide level, particularly Cal Trans.
10 We've met with them frequently. They have a lot
11 of interest in this, but have not yet ponied up
12 with enough money to keep it going forward.

13 We need to make sure that all the
14 metropolitan planning organizations throughout
15 California and Cal Trans make sure they understand
16 the value of fuel demand as a decision factor in
17 their transportation planning process. So, we
18 really have to step into their process and make
19 sure they understand the value of our work.

20 Secondly,, we need to make sure that we
21 integrate the air pollution, the transportation,
22 and the land use modeling inside the MPO so they
23 can understand the integration between all of them
24 together and not just stove piping one after the
25 or they are done sequentially. They should be

1 done at the same time, and the model we have here
2 has the capability of doing that.

3 A third, we need to assist local
4 governments to help them implement these kinds of
5 programs. We find that this is a fairly data-
6 intensive program. It does require a fairly high
7 skill level to operate the program, and we were
8 hoping originally that each of the local planning
9 organizations would be able to hire the talent
10 needed to run this and spend the money to staff it
11 as well as get the data going into it.

12 Unfortunately, we have found that the local
13 government in general is fairly strapped for money
14 and has not been able to come up with the staff
15 resources or money to fully implement these kinds
16 of programs. So, unfortunately, we find that more
17 assistance level from the statewide level, whether
18 we do it with incentives, whether there is
19 technical assistance or grant programs, there are
20 a variety of options we have available that we can
21 do that at the state level.

22 We originally had hoped that we might be
23 able to out source this entire program once we
24 found it was demand driven, we might be able to
25 hand this off to another entity, but

1 unfortunately, we have not yet found an entity
2 willing to take that burden because there is a
3 fairly high cost burden that goes with it.

4 That really gets to our last one that we
5 might need to establish really a statewide central
6 deployment so that this accessible to all parties
7 on a consistent basis. We are hoping also that if
8 we put this out to an individual regional planning
9 organization such as SACOG, they could go with it
10 themselves, but they might make changes which
11 would make it inconsistent or incompatible with
12 other statewide planning organizations. There is
13 a real value in keeping this as a consistent tool
14 that all parties can use.

15 That concludes our whirlwind tour of
16 Places, and I am available for any questions.

17 COMMISSIONER PFANNENSTIEL: David, thank
18 you for putting this into the IEPR. I think it is
19 an important tool that we have. We talked before
20 about the difficulty taking what is a valuable
21 tool and getting out there to really make a
22 difference in California, and you have some ideas.

23 I think the real point is to get it from
24 being sort of the poor stepchild who doesn't quite
25 belong anyplace, but everybody recognizes value to

1 being part the planning. I mean really primarily
2 the transportation planning in California.

3 I know your success with what is going
4 on in Sacramento, I know you've done some work in
5 San Luis Obispo, San Diego, how many places, no
6 pun intended, how many regions of California do
7 you think Places has made a difference?

8 MR. MAUL: Here in Sacramento it has, in
9 San Diego we have had a couple of pilot projects
10 that we've worked down there that have been very
11 effective in helping local communities better
12 understand it.

13 San Luis Obispo, the air quality folks
14 tell us it has been a real benefit down there to
15 help them work more closely with (indiscernible)
16 planning people. Every time we've done a pilot,
17 the people who have used it have found value in it
18 and at least told us they have made a difference
19 in how they do their business down there to
20 improve the quality of life and reduce
21 transportation energy demand.

22 There are big chunks of the state we
23 have yet to tackle. That is, the LA area working
24 with SCAG and SCAG tells us that they want to take
25 this on, they are considering it for next year,

1 but they are going to need a lot of technical
2 assistance in implementing it into this LA area.

3 The Bay Area through ABAG, there are
4 some real challenges down there in the Bay Area.
5 They also have expressed interest, but that is a
6 fairly big chunk of resources to make sure it is
7 successful down there and make a real difference
8 as you point out.

9 COMMISSIONER PFANNENSTIEL: It also
10 looks like you've been focused on the people who
11 have been most interested in Places have been more
12 urban areas, and yet a lot of the growth is
13 happening in California, and a lot of the
14 certainly the growth in housing and the demands on
15 the electricity system have been more in the newer
16 development, formerly rural areas. Have any of
17 them shown a great interest in using Places do
18 some of their transportation planning?

19 MR. MAUL: We contacted Merced County
20 quite some time ago when they were considering UC
21 Merced campus to see if it would be a value down
22 there, and they actually had interest, but Merced
23 County planning is a relatively small staff and
24 were not able to take on both this challenge and
25 planning for the campus itself. So, again, it was

1 a staff limitation problem. As you point out, I
2 think the Central Valley and county by county or
3 if you do a great valley approach would be a great
4 application for this.

5 COMMISSIONER PFANNENSTIEL: Thanks. I
6 think we all are concerned with finding the right
7 place to put this tool so that it actually does
8 get used and from our standpoint in terms of
9 reducing vehicle miles traveled, but I think in a
10 much broader context.

11 COMMISSIONER BOYD: A couple of comments
12 on this subject which is a subject that I know is
13 near and dear to both Commissioner Pfannenstiel
14 and I have a long history of saying that poor
15 planning in California has led to a lot of the
16 problems that we are trying to solve now, and that
17 is certainly true in the air quality business
18 where Council of Governments efforts to do
19 planning and transportation control majors fell
20 totally on their face and are ultimately left out
21 of any state implementation plan with regard to
22 air quality issues because of their inability to
23 deliver anything on commitments made.

24 Nonetheless, Commissioner Pfannenstiel
25 and I sometime back met with the Director of Cal

1 Trans to discuss transportation issues and land
2 use planning in particular and transportation
3 planning and reached an understanding and the
4 desire to work cooperatively together. They are
5 quite familiar with Places.

6 Separately we met then with the CAL EPA
7 secretary and ARB, and we are trying to put
8 together a three-sided effort between CAL EPA,
9 ourselves, and Cal Trans to give this greater
10 attention and perhaps facilitate greater
11 implementation. Once again, we are trying to push
12 this into the arena of daily planning.

13 There are lots of other agencies. I
14 won't bother to mention that we need to work with
15 to try to facilitate this because we are really
16 running out of a lot of other strategies.

17 I would note that the National Center
18 for Clean Air Policy that this agency uses to help
19 with its climate change program, was involved with
20 SACOG and this agency recently here in Sacramento
21 and Places, I believe, played a role in that
22 because I attended a meeting just last week of
23 this national organization where Places and this
24 effort here and the efforts by this Commission
25 were highlighted and passed on to a lot of folks

1 as examples of something that holds great promise.

2 Maybe we can get this up and going
3 again. I am not sure, but I know Ms. Pfannenstiel
4 are trying mightily to get this moving and in the
5 context of a host of meetings we've held lately
6 with the Secretary of CAL EPA, even on ethanol,
7 climate change, and biomass, we are trying to wrap
8 all the pieces of the system together in
9 alternative fuels and in land use planning and the
10 climate change attributes and the biomass bio-
11 energy attributes of a lot of these activities are
12 getting woven together slowly but surely. We will
13 see how successful we can be.

14 I mean quite frankly, as the
15 commissioners know and as Dave knows, and many
16 staff in the audience know, we are ill funded in
17 this arena, and it is almost criminal that there
18 is not more money provided, but the moth is
19 attracted to other flames at the moment. We have
20 had to reach outside of the organization to other
21 organizations to try to help us facilitate this,
22 such as the Center for Clean Air Policy or even
23 CALCARS and organizations like that to help us
24 implement some of our alternative fuels programs.
25 So, we will see what we can do, but we need to

1 reach out even more, particularly in this area.

2 PRESIDING MEMBER GEESMAN: Thanks, Dave.

3 MR. MAUL: Thank you.

4 MR. FONG: Before I jump into the last
5 prepared staff presentation, let me remind those
6 of you who may have come to the workshop a little
7 late, if you want to speak, we request that you
8 fill out one of these blue cards in a box in the
9 lobby. Hand that card to me, and I will see that
10 Commissioner Geesman gets a hold of that, and then
11 he will call you at an appropriate time during the
12 workshop when we invite participants to make
13 comment.

14 Also, I would like to point out that
15 there is a fleet of vehicles parked out front on
16 Ninth Street in front of the Energy Commission's
17 building. These vehicles are for test drive
18 purposes. We really encourage you to take
19 advantage of this opportunity to see some very new
20 and attractive vehicle technologies.

21 My presentation will cover work that the
22 Energy Commission staff has just recently
23 completed. This work is to evaluate a variety of
24 options that might help California reduce its
25 petroleum fuel use.

1 What we thought was essentially going to
2 be a relatively simple update of work that we
3 originally performed in 2003 for the AB2076 report
4 activities as well as the 2003 Energy Report. It
5 turned out to be a much more complex undertaking
6 given the changes that our transportation energy
7 market is now seeing.

8 You heard some of that this morning when
9 Chris Kavalec discussed the changes in our
10 transportation energy demand forecast and why this
11 current forecast is lower than the forecast that
12 we projected in 2003.

13 My presentation will cover some
14 background information about what occurred in the
15 2003 Energy Report and transportation energy. I
16 will provide a brief overview of the petroleum
17 reduction options that we evaluated for this
18 particular 2005 Energy Report proceedings.

19 I will talk about the cost and benefit
20 methodology that we used in evaluating these
21 different petroleum reduction options, provide a
22 summary of the results of our analysis, and
23 present a few key findings.

24 In 2003, the Energy Commission in its
25 Energy Report adopted a on-road transportation

1 energy demand goal such that in 2020 our on-road
2 gasoline and diesel demand would be 15 percent of
3 the 2003 demand level, and we would attempt to
4 maintain that demand for the foreseeable future.

5 The second important goal was that we
6 wanted to increase the use of non-petroleum fuels
7 in on-road transportation use to 20 percent of the
8 on-road fuel that would be consumed in 2020 and
9 then up to 30 percent by 2030.

10 In this current Energy Report
11 proceeding, we have grouped our petroleum
12 reduction options in two primary categories. One,
13 there is a set of efficiency options. For
14 example, we compared improved vehicle fuel economy
15 versus the anticipated base case. We looked at
16 improving vehicle maintenance practices, more
17 efficient on-road diesel trucks, as well as light
18 duty vehicles.

19 There are additional options that we
20 evaluated and you can see a complete listing of
21 those options in the staff report.

22 In the alternative fuel option area, we
23 looked at electric battery technologies, primarily
24 neighborhood electric vehicles and city electric
25 vehicles. We evaluated grid connected hybrid

1 electric vehicles. These are electric vehicles
2 that you can plug in. They have a 20 to 60 mile
3 range when operating on their battery systems.

4 We evaluated the potential of going up
5 to an E10 blend for our gasoline fuel. We
6 evaluated LNG and CNG in medium and heavy duty
7 vehicle applications.

8 Gas to liquid fuel was another option,
9 and then renewable diesel which is a combination
10 of bio-diesel and other biomass to diesel like
11 products.

12 In our methodology, we made a series of
13 economic comparison of petroleum reduction options
14 with business as usual options. We looked at
15 annual incremental expenditures and benefits for
16 each of these comparisons. These costs and
17 benefits were discounted over time, and then
18 summed over the forecast period.

19 The results are expressed in terms of a
20 present value net benefit as well as volumes of
21 potential petroleum fuel reduction.

22 Now the economic components of our cost
23 and benefit methodology are placed into four
24 primary groupings and summed up in what we call
25 the direct net benefit. First there is a direct

1 non-environmental benefit. These are elements
2 that are associated with consumer cost and
3 benefits. They generally provide an indication of
4 the market competitiveness of that particular
5 option.

6 We also evaluated the change in
7 government revenue that might occur due to
8 deployment of an option. The change in government
9 revenues primarily a fuel excise tax change if the
10 petroleum reduction option resulted in less
11 gasoline or diesel fuel being purchased than the
12 state's revenue for fuel excise taxes would tend
13 to decline.

14 That resource is the state's primary
15 investment opportunity for improving our
16 transportation infrastructure.

17 PRESIDING MEMBER GEESMAN: Isn't that a
18 rather heavy mill stone to hang around the neck of
19 each of these different options? It would seem to
20 me that first it assumes that state government is
21 so unimaginative that it would not come up with a
22 replacement source of revenue or some other means
23 by which to generate that revenue. I think the
24 history of our state would suggest that the
25 revenue seekers are always able to come up with

1 some fairly creative ways to generate revenue.

2 Secondly, it would seem to penalize your
3 initiatives that are in the most effective at
4 reducing petroleum use. I recognize that we
5 enshrined this in the AB2076 report, but for the
6 life of me, it seems fairly perverse.

7 MR. FONG: The staff took a viewpoint
8 here where we were trying to account as accurately
9 as possible all the different costs and benefits
10 that might occur due to a change in some future
11 condition.

12 Yes, it is likely that the state would
13 develop alternative sources of revenue to properly
14 support its infrastructure system. Our economic
15 outlook, though, was since that tax revenue, that
16 fuel excise tax revenue is going to produce a
17 dollar for dollar benefit as that money is
18 collected, if that revenue were to change, then
19 that benefit would decline.

20 We weren't knowledgeable enough though
21 to perhaps develop an alternative solution to that
22 current revenue stream. Certainly we could have
23 assumed that some tax increase in other area could
24 equal the fuel excise tax revenue, but we chose
25 not to do that given the I guess uncertainty and

1 multitude of different mechanisms that the state
2 might adopt.

3 On the other hand, when that fuel excise
4 tax revenue does not go into government coffers,
5 it does in fact go directly to the consumer. In
6 the direct non-environmental benefit category,
7 those fuel excise taxes that are no longer
8 collected actually go to those consumers. So, we
9 are taking credit from a consumer's perspective on
10 the value of those reduced tax revenues. So, they
11 are not lost in our evaluation, they are just
12 shifted from one group to another. We reflect the
13 change in Category B because that is where the
14 decline occurs, but consumers in fact benefit
15 directly from having to pay an additional fuel
16 excise tax.

17 PRESIDING MEMBER GEESMAN: If I look at
18 your table, though, it would strike that rather
19 than rank ordering proposals based on direct net
20 benefit, if I were truly motivated by desire to
21 reduce petroleum consumption, I'd probably add
22 back in the changes in government revenue and come
23 up with perhaps a completely different rank
24 ordering of what you see as the most promising
25 programs.

1 MR. FONG: Certainly. We would
2 certainly take your counsel into consideration.

3 COMMISSIONER BOYD: Dan, I think we need
4 to have this discussion internally because
5 Commissioner Geesman makes an excellent point and
6 maybe we need to make this some kind of revenue
7 neutral thing that we asterisk or footnote that a
8 solution is needed, and I think that we know that
9 the Secretary of Business Transportation and
10 Housing almost has a chart to look at that kind of
11 problem and that issue of adequate tax revenue to
12 support transportation system as a result of
13 changes in fuels and changes in fuel use and so on
14 and so forth.

15 To not recognize it would subject our
16 analysis to criticism for not being aware of that.
17 The way we use the treatment of it, it well could
18 be a mill stone around our neck that we are
19 saddling ourselves with that perhaps we shouldn't.
20 I think that is a discussion that obviously the
21 committee will have before we finalize the report.

22 MR. FONG: Okay, the third category in
23 our cost benefit methodology addresses what we
24 term direct environmental net benefit. These are
25 environmental characteristics that are improved

1 due to a reduced petroleum fuel consumption. They
2 essentially monetize avoided environmental damage.

3 Then the fourth category in our cost
4 benefit methodology is a consideration of the
5 external costs of petroleum dependency. This is
6 the avoided military costs and macro-economic
7 costs of petroleum dependency.

8 All four of these items are then summed
9 up for our final result which we call the direct
10 net benefit.

11 I am going to show you some graphics of
12 our analytic results. I will be showing some
13 direct net benefit comparisons between various
14 efficiency options and then various alternative
15 fuel options.

16 I'll try to show the relative magnitudes
17 of the non-environmental and environmental
18 benefits and the external costs of petroleum
19 dependency.

20 Finally, we will display two examples of
21 petroleum reduction portfolios and scenarios.

22 For some selected efficiency scenarios
23 and options, this particular graphic displays a
24 range of net benefits for five or six of our
25 efficiency scenarios. The upper most option there

1 is improved maintenance practices that prove to
2 have the largest present value net benefit of our
3 various efficiency options.

4 The reason why that is so significant is
5 that these maintenance practices are relatively
6 inexpensive, and they produce fairly significant
7 petroleum reductions because they can be applied
8 across the entire fleet at a very near term time
9 frame, so there is no deployment like requirement
10 for these kinds of improved maintenance practices.

11 PRESIDING MEMBER GEESMAN: Could you
12 elaborate on what they are and how we achieve
13 them?

14 MR. FONG: There were three primary
15 practices which we felt made some good sense.
16 They are air filter changes, oil and oil filter
17 changes, and air pressure monitoring of your
18 tires.

19 Based upon projections from the US
20 Department of Energy, each of those different
21 practices has a range of potential fuel efficiency
22 improvements. I believe the air filter, for
23 instance, had a maximum fuel economy improvement
24 of about ten percent.

25 So, if you were to buy an air filter

1 which is approximately in today's dollars about
2 \$40 a change out, that could potentially improve
3 your fuel consumption or reduce your fuel
4 consumption by roughly ten percent. So, that is a
5 very inexpensive and relatively easy practice for
6 a car owner to actually perform and then achieve a
7 fairly good reduction in their fuel consumption.

8 Air pressure and tire monitoring was
9 also estimated to provide 2 percent fuel economy
10 improvement. Again, all you have to do is check
11 your air pressure and go to a service station and,
12 you know, make sure your tires are at the
13 recommended tire pressure.

14 Some of our statistics show that there
15 is a relatively large of the driving public whose
16 tires are perhaps 75 percent of the rated air
17 pressure level, and so there are a lot of people
18 who are driving with tires that are far below the
19 recommended air pressure. Not only is it a safety
20 issue, but they are actually using more fuel than
21 necessary.

22 We assume that a public information
23 campaign similar to the campaigns that the state
24 has mounted for Flex Your Power or bottle
25 recycling, and annual investment of \$10 million

1 could be effective in reaching an upper most
2 fraction of the target population of about 30
3 percent. So, that is roughly 20 percent of the
4 on-road vehicle owners we believe we could reach
5 through a consumer education and marketing effort.

6 So, the fuel reduction is based on that
7 population of people taking up these improved
8 maintenance practices.

9 MS. JONES: Dan, can I ask you if there
10 is a difference in assumptions you made regarding
11 maintenance across the fleet, would you assume
12 more of the existing vehicles that maintenance
13 would have a greater improvement there.

14 MR. FONG: The vehicles that actually
15 would be improved the most are the older vehicle.
16 We assume that for vehicles that were less than
17 six years old, those vehicles are likely to still
18 be under form of original vehicle warranty, and
19 that those vehicles are likely to be maintained a
20 lot better than vehicles that are no longer under
21 warranty.

22 So, there was a subset of the light duty
23 vehicle population that we targeted. We then
24 determined populations, and from that, determined
25 the amount of fuel that might be saved. We are

1 looking at only a subset of the entire light duty
2 fleet, and we felt that was a reasonable
3 assumption.

4 MS. JONES: Thank you.

5 MR. FONG: I would like to point out two
6 specific cases here to just sort of show the
7 importance of various factors in our analysis.

8 On the third bar down, we examined
9 improved vehicle fuel economy using incremental
10 vehicle costs for a mild hybrid technology. These
11 incremental fuel costs were developed by staff at
12 the California Air Resources Board.

13 The first case there is what we call a
14 mild hybrid, and that is a hybrid vehicle where 15
15 percent of its peak power is provided by its
16 battery, electric motor system. Another case that
17 we examined which is the case shown at the very
18 bottom of this graph, that is the carb full hybrid
19 scenario. It also uses incremental vehicle costs
20 developed ARB staff, but the full hybrid is a
21 hybrid where 40 percent of its peak power is
22 delivered by its battery electric motor system.

23 The mild hybrid case proved to be a
24 fairly attractive efficiency option. It had net
25 benefits on the order of \$ 5 billion over the

1 forecast period. Alternatively the full hybrid
2 did not meet the positive threshold there. It was
3 a negative in terms of cost benefit. The reason
4 for that are two fold.

5 First, the incremental cost of the full
6 hybrid was substantial greater than the mild
7 hybrid. Secondly, these vehicles are now being
8 compared against the technology we believe will be
9 used by the automotive industry to fulfill
10 California's greenhouse gas emission standards.

11 Those future vehicles under the
12 greenhouse gas standard scenario will be consuming
13 much less fuel than vehicles being sold today.
14 When we made this comparison, we were comparing a
15 more advanced hybrid vehicle against the types of
16 technologies that we envision will be part of
17 California's greenhouse gas emission standards.
18 There is much less fuel to be saved when we are
19 comparing these hybrid vehicles against the
20 greenhouse gas standard vehicle.

21 The full hybrid case proved to be
22 negative, and the incremental costs could not be
23 fully offset by the fuel savings simply because
24 the amount of fuel that you are saving in this
25 particular scenario.

1 PRESIDING MEMBER GEESMAN: Did you
2 develop a similar table under your alternate
3 scenario?

4 MR. FONG: Yes, we can go to that.

5 MR. SMITH: Dan, before you leave that,
6 just as a point of reference, where would you
7 place the current Prius technology?

8 MR. FONG: The current Prius is around,
9 I think has peak power of roughly 20 percent of
10 being provided by the battery electric system, so
11 that is similar to a mild hybrid.

12 Now to Commissioner Geesman's question.
13 I guess I misinterpreted it originally. I can
14 show a table that compares the cost benefit
15 results that we generated for the miles in the
16 full hybrid cases, the work that we did for AB2076
17 and then compared it against an updated case with
18 Pavley as well as without Pavley. At the end of
19 my presentation, I'll go to that slide and you can
20 see the trends that are caused by these different
21 base case conditions.

22 PRESIDING MEMBER GEESMAN: Okay.

23 COMMISSIONER PFANNENSTIEL: Dan, I'm
24 sorry, before you go back, the range that you are
25 showing here for each of these bars, each of these

1 horizontal bars, would you explain the ends of
2 that range?

3 MR. FONG: The ranges are primarily
4 caused by the different petroleum priced scenarios
5 that Chris Kavalec mentioned earlier this morning,
6 so there is a very high petroleum price which is
7 at the far most right, and then the low price
8 scenario is at the far left.

9 Some of these are also affected by the
10 assumed vehicle populations that are part of these
11 different options, so the width of the bar is also
12 affected by what penetration or long term
13 population of vehicles that might participate in
14 these different options.

15 The narrow bar is for instance for truck
16 stop electrification and for the light duty diesel
17 vehicles, even though those are done at the same
18 ranges of petroleum fuel prices.

19 The number of vehicles involved in those
20 cases are not nearly as large as some of the other
21 cases, and so you don't have the same magnitude in
22 your final cost benefit.

23 COMMISSIONER PFANNENSTIEL: The bars
24 take into account both the direct net benefit and
25 the percent reduction or the actual total gallons

1 of reduction?

2 MR. FONG: Yes.

3 COMMISSIONER PFANNENSTIEL: They are
4 both included in that?

5 MR. FONG: Yes.

6 COMMISSIONER PFANNENSTIEL: One last
7 question. On your external cost of petroleum
8 dependency, which is the military savings and all,
9 how did you come up with that?

10 MR. FONG: Originally, when we produced
11 the AB2076 report, the California Air Resources
12 Board worked with out joint contractor, TIAX.
13 TIAX did a fairly thorough literature review of
14 all the various sort of economic analysis looking
15 at the affects of US petroleum dependency,
16 including potential military costs that support
17 the flow of oil in various regions of the world.

18 They also looked at how dependency or
19 world oil price that was controlled by OPEC, how
20 that resulted in higher than normal fuel prices,
21 that if we had, essentially, a free and open
22 market, we would have paid much less for that
23 gasoline and diesel fuel product.

24 They developed a methodology where they
25 could apply those kinds of effects to the per

1 gallon reduced petroleum consumption that might
2 result from these various options, so that for
3 every gallon of reduced petroleum fuel
4 consumption, there is a benefit in a reduced
5 external cost.

6 I'll show you some relative magnitudes
7 of those different effects in some follow on
8 slides.

9 PRESIDING MEMBER GEESMAN: When were
10 those costs calculated by TIAX?

11 MR. FONG: It was in early to mid 2003
12 when basic methodology was developed by our
13 technical team, so they used studies and
14 literatures and analysis that were published prior
15 to that time frame. So, it doesn't take into
16 account for instance the current geo-political
17 condition for supplying our petroleum products.

18 PRESIDING MEMBER GEESMAN: Or current
19 oil prices?

20 MR. FONG: Right.

21 PRESIDING MEMBER GEESMAN: Or current
22 military expenditures?

23 MR. FONG: That is correct too.

24 PRESIDING MEMBER GEESMAN: Or current
25 projections of oil prices.

1 MR. FONG: Now a similar set of
2 comparisons were made for a variety of our
3 alternative fuel scenarios. Upper most on this
4 graph is the LNG, CNG case for medium and heavy
5 duty vehicles. That proved to be a very positive
6 option for reducing diesel fuel demand.

7 Next is our electric battery technology.
8 Again, this is a small sort of non-highway type
9 electric vehicle. We looked at two different
10 classes there of a neighborhood electric vehicle
11 and a city electric vehicle. The real differences
12 between those two are their top speeds. I believe
13 the NEV has a top speed of 25 or 30 mph, and then
14 the City CEV may be able to go up to 40 or 45
15 miles per hour.

16 These are sort of special purpose type
17 vehicles, and so when we made the comparison
18 between these electric vehicles with some base
19 case vehicles was in our assumption some low speed
20 or small gasoline vehicle that was operated at low
21 speed.

22 As you look down this set of alternative
23 fuel scenarios, you will see some that are barely
24 over the neutral threshold which is indicated by
25 the zero point on our present value graph there.

1 What that means there is if any option is there at
2 zero or on the positive side, it produces a fairly
3 attractive petroleum reduction option.

4 If it sat exactly on zero, it means that
5 the consumer is essentially indifferent, would be
6 indifferent to that particular option. It is no
7 different than the base case option. So, if you
8 are interested in petroleum reduction, even those
9 have a zero net benefit. It still might make
10 sense to deploy that option in a petroleum
11 reduction policy.

12 E10 was slightly positive because in our
13 assumption, we believe E10 can be produced at no
14 higher cost than our current gasoline, so it is a
15 neutral consumer choice at the retail level.

16 As we go down this list, we see options
17 that don't look as attractive as some of the other
18 alternatives. We are a little disappointed that
19 the results for the renewable diesel option, with
20 some negative at that. As Commissioner Geesman
21 and Commissioner Boyd pointed out, that really is
22 due primarily to the change in government revenue.

23 Were it not for the methodology that we
24 use or chose to use to reflect the net benefit,
25 then the renewable diesel would also be a neutral

1 option at the retail level. Because of the
2 federal tax subsidy that is provided for renewable
3 diesels, there was a loss in government revenue
4 for that particular option.

5 The last two here that we show are two
6 different cases for CNG and light-duty vehicle
7 applications. We tried to model the relatively
8 new honda natural gas vehicle, along with a home
9 refueling system, which is called PHIL.

10 Again, for the CNG and light duty option
11 cases, the incremental costs of those vehicles
12 were insufficient, were too high to offset any
13 fuel savings in natural gas use.

14 Again, an important comparison point,
15 though, is that these light-duty vehicles that
16 we're modeling are compared against the
17 anticipated light-duty technologies that will be
18 part of our future fleet. Those vehicles will be
19 designed to meet the state's greenhouse gas
20 emission standards.

21 Those comparison vehicles will consume
22 much less gasoline than current vehicles. So,
23 these alternative fuel vehicles that would go into
24 the light-duty fleet have a difficult benchmark to
25 overcome.

1 PRESIDING MEMBER GEESMAN: Back on the
2 demand reduction list, some of the more notorious
3 ones I don't see on the list, the ones that Mr.
4 Sparano and others like to flog in absentia. Did
5 you look at a gasoline or diesel tax measure?

6 MR. FONG: In this update, we chose not
7 to look at any of the pricing mechanisms that we
8 examined during the AB2076 process. We felt that
9 work that we did two years ago still is valid.
10 Yes, the conditions have changed, but we believe
11 that some of these pricing measures will still
12 compare fairly favorably with some of these other
13 hardware related changes. Because of our position
14 in the AB2076 report and subsequently in the 2003
15 Energy Report, we chose not to reevaluate those
16 pricing mechanisms for this particular energy
17 report.

18 PRESIDING MEMBER GEESMAN: I think that
19 is something we probably ought to give some
20 thought to. I think the value of our work to the
21 governor and the legislatures is much information
22 as it is advocacy. I think that since the
23 petroleum industry flogged the last effort as
24 containing a hidden tax, then I am not certain
25 that perhaps the best approach this time might be

1 to make it not hidden, simply quantify your
2 analysis.

3 You don't have anything I note on
4 reducing speed limits. Have you looked at that
5 option?

6 MR. FONG: In AB2076 we did screen that
7 particular option. Comments that we received from
8 various groups, particularly the California
9 Highway Patrol really discouraged us from
10 examining that again. When we looked at it in
11 2076, the potential petroleum fuel reduction was
12 probably on the order of a few percentage points.
13 That is really a policing type reduction option.
14 If the policing is done in a fairly strict manor,
15 you might achieve the projected reductions, but
16 there was a cost for that policing action, and
17 that was expressed to us by the California Highway
18 Patrol. We chose not to include it in this
19 update.

20 PRESIDING MEMBER GEESMAN: What about
21 carpooling?

22 MR. FONG: Carpooling we felt when we
23 did the original work also was somewhat in
24 decline. Many of the air quality management
25 districts that had extensive carpooling incentive

1 programs were beginning to withdraw their support
2 for those mechanisms, and so, again, we chose not
3 to evaluate that simply because it appeared that
4 it wasn't that attractive of a petroleum reduction
5 option.

6 PRESIDING MEMBER GEESMAN: If I
7 understand you correctly, you made a determination
8 two years ago in the AB2076 work that you are
9 carrying forward today?

10 MR. FONG: Yes.

11 PRESIDING MEMBER GEESMAN: I am not
12 certain that I find that satisfactory, but I will
13 take that up with my colleagues before asking that
14 you do additional work.

15 MR. FONG: Okay, any further questions
16 on this? I will continue on, on showing some of
17 the relative magnitudes for the different
18 environmental characteristics that were part of
19 our direct environmental net benefit.

20 There were three primary economic
21 elements involved in the environmental category.
22 They are reduced greenhouse gas emissions, reduce
23 criteria pollutants, and then the reduced effects
24 are the effects are reduced spills from petroleum
25 fuels.

1 In the efficiency options, again, I show
2 a selected group of them just to demonstrate the
3 relative importance of those three different
4 economic elements.

5 As it turns out, when we monetize the
6 greenhouse gas emission reductions due to reduced
7 petroleum fuel use, the greenhouse gas benefit in
8 terms of its value, dominated the environmental
9 net benefit.

10 This graph tends to show the significant
11 value placed upon greenhouse gas reductions in
12 comparison to the other two environmental elements
13 that were part of our net benefit comparison.

14 Now, the reduced criteria pollutants is
15 relatively low because the Air Resources Board
16 assumed that future vehicles, all future light-
17 duty vehicles will meet a PZEV emission
18 performance level. For those of you who are
19 familiar with that terminology, PZEV is a partial
20 zero emission vehicle. So, it is a much lower
21 polluting vehicle than current mainstream
22 technology.

23 When we were looking at potential
24 emission reductions, they were extremely small
25 when looking at reduced criteria pollutants. Even

1 if these vehicles that we were modeling could
2 achieve PZEV or slightly better than PZEV, the
3 amount of emission reduction is extremely small.
4 So, the value of those emission reductions is also
5 extremely small.

6 PRESIDING MEMBER GEESMAN: How did you
7 monetize the greenhouse gas benefit?

8 MR. FONG: This again was through survey
9 work that was performed by TIAX. They looked at a
10 whole series of international and national studies
11 trying to determine what might be the avoided
12 damage from reduced climate change impacts. They
13 arrived at what they felt was sort of a compromise
14 dollar figure. It turned out to be \$15 per ton of
15 CO2 or CO2 equivalent that was reduced. We
16 applied that monetary factor to our petroleum
17 reduction scenarios.

18 PRESIDING MEMBER GEESMAN: So, it is
19 basically right in the middle of the \$8 to \$26 ton
20 range, the PUC has set?

21 MR. FONG: Yes. That is a very good
22 point. Yeah, you are exactly right. They chose
23 not to be sort of on the high end, and they also
24 chose not to be on the low end.

25 Now looking at the same types of

1 comparisons for our alternative fuel cases, we see
2 a little larger fraction of the environmental
3 benefits coming from the criteria pollutants, a
4 little less from the greenhouse gasses. That is
5 because these alternative fuel vehicles actually
6 totally supplant or reduce upstream emissions from
7 the refining and processing and distributing of
8 petroleum fuel products.

9 The value of the reduced criteria
10 pollutant, at least for the environmental options,
11 are proportionally larger than they were for the
12 efficiency options. The efficiency options,
13 essentially, just reduce the fraction of gasoline
14 or diesel used. You still used gasoline, so you
15 still had some criteria pollutants coming from
16 those sources.

17 Another thing to try to note, which I
18 should have pointed out earlier here is the
19 magnitude of the cumulative benefits. For the
20 environmental options, they are all sort of less
21 than \$1 billion when summed over our forecast
22 period.

23 For the efficiencies, the environment
24 benefit was slightly greater. It is somewhere on
25 the order of 1 1/2 to 2 1/2 billion. If you go

1 all the way back to our net charts, you will see
2 that the net also is roughly in that same
3 proportion except for the efficiency. Some of the
4 efficiency options exceed \$5 billion dollars all
5 the way up to \$15 billion dollars.

6 The relative importance of these
7 environmental benefits varies between the
8 different petroleum reduction options. Sometimes
9 they are almost the same magnitude, other times
10 they are much less than the direct benefit values.

11 There wasn't any easy generalization
12 that we could make regarding the sort of relative
13 magnitude of the environmental benefits compared
14 to the non-environmental benefits.

15 This last few slides, I am comparing the
16 total direct environmental net benefit compared to
17 the external cost of petroleum dependency. For
18 the efficiency options, they were sort of
19 comparable. That is the environmental total,
20 benefit total, wasn't that much different than the
21 external cost of petroleum reduction. Yes, it is
22 slightly larger, but not significantly so. The
23 relative magnitude of these benefits are
24 approximately equal.

25 For the alternative fuel options, in

1 many of these cases, they are comparable to the
2 efficiency ones, but in the GTL to CTL fuel case
3 options, the external cost of petroleum dependence
4 was a much larger fraction compared to the
5 environmental net benefit.

6 What does this mean in terms of putting
7 together some strategies on reducing future
8 petroleum demand.

9 We put together a couple of portfolios
10 and scenarios just to illustrate the sort of
11 magnitude and time effect of long term petroleum
12 reduction. In this first scenario, we combined a
13 number of our individual petroleum reduction
14 options to then develop an energy demand profile
15 based upon those options being deployed into the
16 marketplace.

17 This scenario No. 1 includes efficient
18 medium and heavy duty vehicles, which means we
19 will rely on some federal regulatory action to
20 improve medium and heavy duty vehicle fuel
21 economy.

22 We combined the improved vehicle
23 maintenance with the mild hybrid fuel economy
24 case, and so the white area sectors there is
25 reductions in petroleum demand due to efficiency.

1 We show a small little area there for
2 grid connected hybrids which means that is the
3 equivalent energy demand that would go into that
4 relatively small fleet of grid connected hybrids.

5 We have a gray area there which is a
6 natural gas or a gas to liquid deployment option.
7 Again, that area there which is colored gray is
8 the energy equivalent of natural gas or a gas to
9 liquid fuel that would go into a certain set of
10 vehicles that could then use these fuels.

11 Then the maroon or purple area of the
12 graph is our E10 option, meaning California would
13 increase the amount of ethanol in our current
14 gasoline from roughly 5.7 percent up to 10
15 percent.

16 The blue area of the chart shows you the
17 gasoline, the on road gasoline and diesel demand
18 that the state would still require even in these
19 fuel demand scenarios.

20 I drew in approximately the 2003 on-road
21 petroleum usage goal that was adopted in the 2003
22 energy report. In this particular scenario, we
23 can hit the 2020 goal with a lot of room to spare.
24 However, and this is a big caveat here, the degree
25 of petroleum reduction here is primarily caused by

1 the improved efficiency of medium and heavy duty
2 vehicles and the in the light duty vehicle sector.
3 This would require federal action to adopt
4 standards or performance standards for new
5 vehicles in those different market sectors.

6 If that were not done, we put together
7 an alternative scenario which is shown here.
8 Instead of relying on some national effort or
9 national program to increase the fuel economy
10 standards for light-duty vehicles and for medium
11 and heavy duty trucks, we instead look at a case
12 where we see deployment of light-duty diesel
13 vehicles in combination with improved maintenance
14 and truck stop electrification policy.

15 Now the projected petroleum reduction is
16 not as significant as in the first scenario, but
17 in this case we still also meet the 2020 petroleum
18 reduction demand level that was adopted in 2003.

19 We still rely on moving up to E10 in
20 terms of our gasoline specification. We still
21 believe that we need alternative fuels in our
22 heavy duty vehicles in the forms of natural gas,
23 LNG, or gas-to-liquid option. We still rely on
24 improved maintenance in terms of efficiency.

25 Again, both of these scenarios use the

1 demand forecast based upon the very high petroleum
2 priced forecast that Chris Kavalec discussed this
3 morning, and it also uses the expected profile for
4 on-road gasoline and diesel demand due to
5 greenhouse gas standards being fully implemented.

6 PRESIDING MEMBER GEESMAN: Dan, I am not
7 clear on in your efficiency improvements exactly
8 what you are expecting from the federal
9 government. It would seem to me that the Pavley
10 standards accomplish some of that with respect to
11 light-duty vehicles, but were you calling for
12 something more?

13 MR. FONG: Yes. In our analysis, we
14 believe that there is still a positive case for at
15 least a mild hybrid technology deployment. The
16 Air Resources Board greenhouse gas emission
17 standards did not assume any hybridization would
18 occur due to their regulations.

19 They took perhaps a more conservative
20 view of what was a cost effective technology in
21 order to achieve their greenhouse gas goals, but
22 they did not include any specific hybridization in
23 their technology viewpoint. In our analysis, we
24 went beyond the expected the petroleum fuel
25 reductions that would occur due to the greenhouse

1 gas emission standards.

2 In our analysis for the mild hybrid
3 scenario, we are assuming that approximately 100
4 percent of the new light-duty fleet sold in
5 California would be in the mild hybrid technology
6 category.

7 PRESIDING MEMBER GEESMAN: Would you
8 envision that being a CAFE standard?

9 MR. FONG: Yes, I think in our scenario,
10 we assumed that the federal government would have
11 to adopt fuel economy performance standards that
12 would result in the kind of on-road fuel economy
13 that would be produced through a mild hybrid
14 scenario.

15 That scenario is approximately an on-
16 road fuel economy on average of 40 miles per
17 gallon. I believe the greenhouse gas emission
18 standards is approximately, would produce
19 approximately a 30 or slightly more than 30 miles
20 per gallon on average. We are boosting the fuel
21 economy in our mild hybrid scenario, so that would
22 require some additional forcing function to
23 produce those kinds of more efficient vehicles.

24 PRESIDING MEMBER GEESMAN: How does that
25 compare to what we were recommending in the

1 AB2076?

2 MR. FONG: That is the same scenario.

3 PRESIDING MEMBER GEESMAN: I note that
4 this last Friday, Governor Schwarzenegger sent a
5 letter to Senator Domenici and Senator Bingaman,
6 and among the various things that he recommended
7 be included in this Senate energy bill, was a
8 doubling of CAFE standards for both the existing
9 light-duty vehicles covered and also light trucks
10 and SUV's.

11 MR. FONG: I think that would be very
12 similar to the mild hybrid scenario that we
13 projected. Back in 2003 when we completed the
14 AB2076 analysis, the on-road average gasoline fuel
15 economy here in California was about 20.6 or 20.7.
16 When we recommended that the on-road fuel economy
17 be doubled, we were looking at approximately a 40
18 mpg on average new vehicle performance.

19 Today, it wouldn't necessarily be a
20 doubling because our fuel economy has or is
21 expected to slightly increase. The federal
22 government did modify the light-duty truck fuel
23 economy requirement. They increased it by 1.5
24 mpg, and that would be phased in over the next
25 several years.

1 Even though that sounds like a modest
2 improvement, 1.5 mpg, because the light-duty truck
3 sector has relatively low fuel economy, a 1.5 mpg
4 improvement is approximately 5 percent or greater
5 fuel economy improvement in that sector.

6 In the current analysis, in Chris'
7 demand forecast, he has projected the effect of
8 those increasing fuel economy vehicles being part
9 of our future fleet.

10 COMMISSIONER BOYD: I think what
11 Commissioner Geesman is saying we've gotten
12 response from the governor on at least that
13 component of the 2076 report and the last energy
14 report, it echoes exactly the recommendations
15 made.

16 MR. FONG: In conclusion, let me just
17 provide what we feel are three important findings
18 in our analysis. One to meet our future petroleum
19 reduction goals, we really need a combination of
20 efficiency and alternative fuel options.

21 One by itself is not likely to be fully
22 successful. We still argue that efficiency
23 measures provide the greatest benefit for any
24 given investment.

25 Thirdly, although these alternative fuel

1 options, some of them can be very positive in
2 terms of their net benefit, they still require
3 different degrees of public support and
4 development, and that is because their first costs
5 are generally higher than the business as usual
6 cost.

7 Either you convince consumers that these
8 alternative fuel vehicles are providing additional
9 benefit or additional value, or you adopt programs
10 to create additional benefit or value for those
11 technologies, then it will be difficult for these
12 alternative fuel options to enter the marketplace
13 to the degree that we are projected in our various
14 scenarios.

15 I said that I would show a slide
16 comparing previous AB2076 results and our current
17 results and generally try to show a trend in the
18 petroleum reductions and in the net benefits. So,
19 I will try to find that and put that up on the
20 screen, and then we can go through that.

21 While I am looking for that, Chris
22 Kavalec would like to entertain you for a moment.

23 MR. KAVALEC: I'll try and be
24 entertaining. I just wanted to make a point about
25 the way that government revenue is handled and

1 provide an example to show why it is important to
2 handle it the way we handle it.

3 Let's say that you have a fuel
4 efficiency measure and for simplicity let's say
5 that all gasoline taxes go to maintaining the
6 roads. With this fuel efficiency measure, you are
7 using less gasoline and generating less revenue.

8 Now one of two things is going to
9 happen. Either you are going to have lower
10 quality roads, which is a cost to consumers, or
11 you are going to have to replace that revenue
12 somehow. Let's say you do it with an increased
13 vehicle registration fee. That is also a cost to
14 consumers.

15 If we are going to include as a benefit,
16 fuel savings from consumers paying less for fuel,
17 we also have to include on the other side this
18 increased registration fee.

19 In fact, it is our duty to do that, to
20 tell people, okay, you are going to pay less for
21 fuel, however, if you want the same quality roads,
22 you are going to have to make up for it somewhere
23 else.

24 PRESIDING MEMBER GEESMAN: As Russell
25 Long was fond of saying, don't tax you, don't tax

1 me, tax the fellow behind the tree. I think that
2 if we are focused on petroleum reduction as our
3 particular goal, I think there are a lot of smart
4 people, the Department of Finance and in the
5 Legislature that can search out people hiding
6 behind different trees and say let's tax that guy.
7 So, I am not certain it is quite the zero sum game
8 that our analysis forces onto us.

9 Look at your table, for example, take
10 one of the cases that Dan gave, the renewable
11 diesel measure, which he found had a direct net
12 benefit of $-.28$. It had a change in government
13 revenue of $-.80$. If I added the $.80$ back in,
14 renewable diesel would have a positive benefit of
15 $.52$. It would seem to me that our task as an
16 energy agency is to focus on that $.52$ and make
17 very clear the impact on government revenue and
18 make very clear that if in fact the state chose to
19 pursue that strategy, there would be a revenue
20 make up requirement.

21 I think we may have perhaps in our zeal
22 to be fiscally responsible, lost sight of our
23 primary objective.

24 MR. KAVALEC: My point was not to argue
25 with what you just said, but that if our goal is

1 to provide full information on social costs, we
2 have to do it this way. If we are more interested
3 in the petroleum reduction aspect, then it may be
4 a matter of presentation.

5 MR. FONG: Let me explain this table
6 that I've put up here that sort of compares some
7 of our earlier work that we did two or three years
8 ago for AB 2076 and some of the current work that
9 we are now discussing at today's workshop.

10 On comparison or showing the mild hybrid
11 and full hybrid cases that we examined under 2076
12 and what we are doing today, so the cells that are
13 highlighted in yellow are supposed to be
14 comparable cases, and so the cells highlighted in
15 the blue or light blue or internally consistent
16 within those cases.

17 Let's first look at the yellow
18 highlighted cells, and that corresponds to the ARB
19 mild hybrid scenario. In 2076, we projected a
20 2030 displacement of about 9.9 billion gallons.
21 You go down to the middle section of the table, we
22 look at the ER 2005 analysis for that same
23 technology deployment at a low price petroleum
24 scenario which was equivalent to the 2076 very
25 high price scenario, so the petroleum prices are

1 comparable then in this particular scenario, but
2 we do not have greenhouse emission standards being
3 implemented in the middle cases there.

4 What you see there is the affect of the
5 reduced petroleum demand that Chris talked about
6 this morning, that in our current 2005 ER, we see
7 in the base case, we see hybrids and light-duty
8 diesels penetrating the market in increased
9 numbers. When we did our mild hybrid case,
10 compare it to that evolving future, there was much
11 gasoline to be saved.

12 If you look at the last column there,
13 the net benefit total, in 2076 we projected a net
14 benefit in excess of 33 billion dollars in present
15 value. For the same case in the 2005 ER, our net
16 benefit declines, still very positive, but sharply
17 declines to \$20.1 billion.

18 Finally, in the third case that I show
19 here, this is with our low price petroleum
20 forecast, with the greenhouse gas standards fully
21 implemented, again, we show an additional decline
22 in the petroleum fuel that is displaced. Again,
23 because the base case technology now is a much
24 better performing vehicle in terms of its fuel
25 economy. There is a much less gasoline that would

1 be displaced through a mild hybrid deployment
2 scenario.

3 The net benefit, the last column again,
4 declines even more significantly. It drops down
5 to \$3.5 billion. Again, we are paying an
6 incremental cost for these mild hybrids. The fuel
7 reduction is less, so the net benefit declines as
8 well.

9 This is a general trend here indicating
10 that one, the base case condition is changing,
11 there is much less gasoline to be saved, our
12 incremental costs are about the same, and
13 therefore, the net benefit will decline because we
14 still have to pay a fixed sort of amount to obtain
15 those additional petroleum reductions. The amount
16 of petroleum reduction is less.

17 Questions.

18 PRESIDING MEMBER GEESMAN: If I look at
19 the first two comparisons, I think I understood
20 you to say that it is the difference in savings
21 attributed to the two initiatives is driven by the
22 forecast?

23 MR. FONG: Yes, and the fact that the
24 comparison vehicle is evolving too. In 2076, we
25 assumed that the average light-duty gasoline

1 vehicle had a fuel economy of about 20.6 miles per
2 gallon. I think in the 2005 ER, that gasoline
3 vehicle is performing better because we now see
4 hybrids, and we now see light-duty vehicles
5 penetrating that market. So, our comparison
6 vehicle, even in the 2005 case, without greenhouse
7 gas standards, that comparison vehicles better
8 than the base case vehicle that we assumed under
9 2076.

10 PRESIDING MEMBER GEESMAN: You changed
11 your assumption for hybrids, for example, based on
12 the 40,000 hybrids that have been sold in the last
13 two years? I'm trying to determine what's changed
14 other than your perspective.

15 MR. FONG: I don't know the exact number
16 of additional hybrids that are part of Chris' base
17 case forecast, that is the forecast without
18 greenhouse gas implementation. I thought he
19 showed a curve on one of the slides showing the
20 difference of on-road gasoline demand. My
21 recollection was that when he compared the base
22 case that was previously performed in 2003 to the
23 case where we are not implementing the greenhouse
24 gas emission standards.

25 The difference between those two cases

1 was roughly 2.5 billion gallons in the year 2025.
2 So, that is roughly 10 percent lower on-road
3 gasoline and diesel demand in our current forecast
4 than it was in 2003.

5 PRESIDING MEMBER GEESMAN: You are
6 challenging my bio-focals, so let me ask that you
7 provide us with a written comparison between the
8 two cases that you shown the top two-thirds of
9 this chart, and we will docket that.

10 MR. FONG: Okay. Now, As I said
11 earlier, we certainly did not expect this result
12 when we started our 2005 analysis. Even we are
13 surprised at the degree of reduced displacement as
14 well as the net benefit that occurs due to the
15 change in sort of the base case comparison point.

16 As we check through these numbers, we
17 are somewhat confident that this is a correct
18 projection based upon all of the various inputs
19 and conditions that we are assuming when we are
20 modeling these different choices.

21 PRESIDING MEMBER GEESMAN: We will look
22 forward to your written comparison.

23 MR. FONG: I would like to open up the
24 floor to any questions from the Committee as well
25 as from the audience.

1 Not hearing any, we might then move to
2 some prepared presentations that people had
3 forwarded to me and had expressed the desire to
4 make public comment. I posted presentations on
5 our desk top here to take those, and if you allow
6 me to call them up, I will do that.

7 PRESIDING MEMBER GEESMAN: Why don't you
8 do that. While they are coming up, Gary, why
9 don't you determine if we have any comments from
10 the telephone?

11 MR. FONG: So I am not overly confused,
12 let's do this from the top down. I have first on
13 our desktop loaded a presentation from BRI. Do we
14 have a representative from BRI?

15 MR. STEWART: Good morning,
16 Commissioners and members of the audience. My
17 name is Jim Stewart, I am Chairman of the Bio-
18 Energy Producers Association of California of
19 which David Roberti, former Senator David Roberti
20 is the president.

21 It is a group of companies dedicated to
22 introducing liquid and electric energy and other
23 bio-based products in the State of California.
24 However, I am here today representing my role as
25 Vice President and Director of Marketing for BRI

1 Energy. We have a very exciting breakthrough to
2 tell you about.

3 I need first to just quickly set the
4 stage of things that you've just been talking
5 about, the global energy demand is going to
6 increase by 54 percent by the year 2025. Demand
7 for electricity will almost double. Crude oil
8 consumption is expected to increase by 50 percent
9 to 121 million barrels per day, and it is still
10 assumed that fossil fuels will account for 85
11 percent of the world's primary energy mix.

12 In 1970, the United States imported 30
13 percent of its liquid fuel. In 1978, President
14 Carter declared the United States policy to be
15 energy independent, so by 2004, we were bringing
16 in 58 percent of our liquid fuel.

17 PRESIDING MEMBER GEESMAN: That is not
18 entirely fair from a partisan standpoint. Nixon
19 called for energy --

20 MR. STEWART: There are a lot of
21 republicans and democrats involved in Washington
22 during that time.

23 PRESIDING MEMBER GEESMAN: President
24 Nixon called for energy independence in 1974.

25 MR. STEWART: That's correct. Our 58

1 percent importation of petroleum, the expense was
2 \$160 billion. The supply of fossil fuels is
3 increasingly becoming insecure, 60 percent of what
4 we imported came from companies or countries that
5 are considered to be geo-politically unstable
6 areas of the world.

7 However, we still are projecting now,
8 the federal government is projecting 68 percent
9 importation by 2025.

10 Looking at California, these are your
11 own Energy Commission statistics. There is a need
12 for 60,000 KWh of new electric supplies by 2030
13 which means 100 new power plants. On-road
14 vehicles will reach 35.6 million by 2025, up ten
15 million from 2003. One wonders where we are going
16 to put them.

17 On-road gasoline usage in your current
18 studies is estimated to reach 17 to 19 billion
19 gallons, depending upon various scenarios by 2025.
20 California is expected to become more dependent on
21 imported petroleum and LNG.

22 Looking at the national picture, we
23 consumed 125 billion gallons of gasoline in 2004
24 and 3.4 billion gallons of ethanol were produced
25 from corn kernels. California consumed

1 approximately 30 percent of that last year. It is
2 generally estimated 950 million gallons.

3 The demand for oxygenated fuel is
4 growing because of the MTBE ban and because of
5 proposed federal standards. The current energy
6 bill calls for 5 billion gallons by 2012, but
7 there is a second bill in Congress to go to 8
8 billion.

9 The potential demand we see for ethanol
10 in the United States could be 25 billion gallons
11 within 15 years. I will comment on that in a
12 moment, but there are various conversations about
13 ethanol, but as a volume extender, it is
14 unquestioned. Every gallon of ethanol we produce
15 and blend with gasoline is one less gallon of
16 gasoline that we have to import. It is indeed an
17 oxygen enhancer. It reduces CO 2 emissions,
18 federal laboratories estimate that the reduction
19 of emissions by 20 or 21 percent if we had 10
20 percent blending.

21 Most importantly, it is compatible with
22 existing gasoline distribution systems, and as we
23 look at the potential for hydrogen in our economy,
24 it is a tremendous goal, but the National Academy
25 of Sciences estimates that it could be 20 or 25

1 years before hydrogen-powered fuels are readily
2 available throughout our economy.

3 The Natural Resources Defense Council
4 estimates we are going to construct another 450
5 million new cars and trucks before we can
6 introduce -- on a fully introduced basis, a
7 hydrogen vehicles in the United States.

8 California has significant waste
9 resources. The state generated an estimated 74
10 million tons of solid waste in 2004. After
11 recycling and diversion, 32 million tons of
12 organic waste were buried in landfills last year.

13 In addition, as you well know,
14 California must dispose at least 33 million used
15 tires per year, one-third of which are placed in
16 landfills and a lot of which are stacked in piles
17 on the California/Mexico border that create a
18 tremendous tremendous problem.

19 California agriculture generated 22
20 million tons of waste in 2004, and they are faced
21 now with a crisis because the Legislature has
22 mandated the cessation of open field burning of
23 agricultural waste, and California agriculture is
24 incurring huge costs or expecting to from needing
25 to collect and land fill that material with no

1 other alternatives.

2 The BRI energy technology that I am
3 about to tell you about could produce as many as
4 two billion gallons of fuel grade ethanol annually
5 from California's post recycled organic municipal
6 waste. It could provide communities with long
7 term low cost renewable electricity at 4 1/2 to 5
8 cents per KWh over 20 year contracts. It can
9 produce ethanol efficiently and very very cost
10 effectively, even if federal ethanol subsidies
11 were phased out. I would like to point out that
12 of the 3.4 billion gallons of ethanol that were
13 produced last year, probably not one gallon would
14 have been produced without a 51 cent federal
15 subsidies and from 5 to 28 cent additional
16 subsidies in the corn producing states.

17 Our technology could enable California
18 to not only to meet its own ethanol requirements
19 domestically but to become an exporter rather than
20 an importer of ethanol. One of the objections to
21 ethanol is that it does have to be brought
22 essentially from the Midwest at across the 12
23 cents a gallon just to import it.

24 It has not been embraced, I believe, by
25 the major energy producers for two reasons. One,

1 the 51 cent federal subsidy. It is not expected
2 that the federal government would provide that
3 level of subsidy of a minimum of 12 1/2 billion
4 gallons which is what would be required to have 10
5 percent blending of ethanol throughout the United
6 States.

7 Secondly, it is generally assumed that
8 from corn base products, they could not produce
9 more than six to eight billion gallons of ethanol
10 in the United States without totally upsetting the
11 market for corn base products.

12 Our technology also can extend by up to
13 80 percent the useful lives of existing landfills.
14 We can eliminate the need for agricultural land
15 spreading of sewage sludge. We can provide a
16 constructive alternative to open-field burning of
17 agricultural waste. We can create an entirely new
18 industry and jobs for California's work force, and
19 we can bring to California millions of dollars of
20 federal incentives that otherwise would have gone
21 to the Midwest.

22 I want to emphasize the governor has
23 established a major goal for California to bring
24 more dollars back to California of its tax dollars
25 from the federal government. The current energy

1 bill has in it provisions passed already by the
2 House for over the next three years alone, \$750
3 million of direct grants for the construction of
4 waste ethanol plants. It has a provision of what
5 appears to be virtually unlimited federal loan
6 guarantees for the construction of waste and
7 ethanol plants.

8 It also has a federal tax credit for
9 waste through electricity, and of course, it has a
10 51 cent federal subsidy for ethanol, all of which
11 was designed to benefit the corn producing states
12 in the Midwest but which our technology could make
13 available to the State of California.

14 How can we do it? BRI has achieved a
15 tremendous breakthrough which enables the
16 efficient co-production of ethanol and/or hydrogen
17 when we come to the point that we need it as well
18 as electricity from such feed stocks as municipal
19 waste, bio-solids, animal waste, green waste,
20 agricultural residues, used tires and plastics,
21 wood waste, forest thinnings, and even hydro-
22 carbons. We can gasify coal, eliminating its
23 combustion in the production.

24 How do we accomplish this? Dr. James
25 Gaddy, the former head of the Chemical Engineering

1 Department at the University of Arkansas over a 17
2 year period trained a microorganism, a patented
3 microorganism to ingest synthesis gas. The gas is
4 created by the decomposition through thermal
5 chemical gasification of waste products. That
6 microorganism will ingest that gas and will admit
7 ethanol, hydrogen, and water. The water can be
8 distilled away to create fuel grade and hydrous
9 ethanol.

10 The technology, as I mentioned,
11 deconstructs, it gasifies carbon molecules in
12 organic feed stocks through an enclosed thermal
13 process. By enclosed, I mean that there are no
14 air emissions from gasification. It is a major
15 breakthrough because we do not combust the
16 synthesis gasses to create electricity. Those
17 gasses are scrubbed, filtered in active carbon
18 infiltration, and fed directly to the bacterial
19 culture which ingests them, and in less than one
20 minute reconstructs those gasses into ethanol and
21 water.

22 We can create electricity without
23 combustion because the bacterial culture like to
24 operate at human body temperature and the
25 gasification process takes the gasses to 2,200

1 degrees, therefore, there is a cooling of the
2 gasses which generates a substantial amount of
3 waste heat which can be used to create high
4 temperature steam to power electrical generators.

5 We consume 95 percent of all carbon-
6 based feed stocks leaving a final residue of non-
7 hazardous ash. The process, it says on the
8 screen, yields 85 gallons of ethanol per dry ton
9 of biomass and up to 180 to 200 gallons per ton if
10 we are using high BTU content materials like used
11 tires or plastics.

12 We have been producing ethanol at a
13 pilot plant in Arkansas for over four years.
14 Currently we are producing a higher quantity of
15 ethanol than is shown on the screen.

16 What is unique about the technology is
17 the entire process takes seven minutes from the
18 time you deliver waste materials like municipal
19 wastes to the completion of finished ethanol. Its
20 feed stocks can be blended, which means for
21 instance that we can blend used tires with sewage
22 sludge and reduce the moisture content of the
23 sewage sludge down below 40 percent and destroy it
24 and turn it into productive products.

25 The process is odorless, the spent

1 bacteria cells can be sold as protein for animal
2 feed and the bacteria culture itself is anaerobic,
3 which means that it dies if it is exposed to the
4 atmosphere. There are no undesirable health
5 hazards.

6 I show this particular schematic because
7 if you look at the word that says "fermentor" that
8 is the only thing that is new about this
9 technology. The microorganisms that reside in the
10 bio-reactor bring together a whole series of
11 previously used technology, such as waste to
12 electricity and filtration of ethanol, but bring
13 them together in a new configuration that
14 revolutionizes the production of electricity and
15 ethanol.

16 These are the bacteria. I once asked
17 Dr. Gaddy where he found them because they are
18 natural. He said in order to do this, they had to
19 be able to operate in a hostile environment. They
20 found them in coal mines, I believe, in
21 Pennsylvania underground that had been burning out
22 of control for years. They felt that if they
23 could exist in that methane environment, they
24 could do what he wanted it to do.

25 Our plants are modular, and therefore,

1 scaleable. The configurations are based upon the
2 size of today's average gasifiers which will
3 handle 125 to 150 tons of waste per day. We have
4 two gasifiers, two bio-catalytic reactors, and a
5 final filtration step. That module will handle up
6 to 100,000 tons of green waste annually as an
7 example. It would produce 8.6 million gallons of
8 ethanol, generate 6.4 MW of power, 4.25 MW of
9 which are marketable energy.

10 One of the arguments about ethanol in
11 the past has been that it takes more BTU's to
12 produce a gallon of ethanol than it delivers.

13 In our technology, we are using waste
14 products which otherwise would be land filled, and
15 our plants produce more electricity than is
16 necessary to operate them. Therefore, the number
17 of BTU's that we use to create ethanol is zero,
18 new BTU's.

19 Another plant configuration if you
20 wanted to produce 48 million gallons of ethanol
21 and generate 35.5 MW of power, you would consume
22 750,000 tons of municipal waste annually. We
23 would simply place seven modules side by side to
24 do that.

25 This is the pilot plant facility in

1 Fayetteville, Arkansas which has been operating
2 for the last four years. This is a gasifier that
3 was produced for us by Consutech. It is a two-
4 stage gasifier that can handle wastes that are not
5 even recycled. Any inert material such as glass
6 or metals that are in the waste, will be ejected
7 from the gasifier in the first stage before the
8 gasses are taken up to 2,200 degrees to break any
9 remaining hydrocarbons.

10 The silver tank on the right is the
11 atmosphere in which the bacteria operate. It is
12 an agitated liquid environment in which they are
13 fed nutrients and chemicals and through which the
14 gasses pass, and it operates at about two
15 atmosphere's pressure.

16 So long as we are feeding consistent gas
17 to the microorganisms, they will continue to
18 reproduce and operate indefinitely.

19 This is a standard distillation tower as
20 has been used in ethanol plants for the last
21 thirty years. The technology we believe is
22 environmentally superior to any other technology
23 currently being utilized to dispose of organic
24 wastes to create fuel or produce electric power.
25 We can say that because there are no emissions

1 from the gasification step which has been
2 something that environmentalists have opposed for
3 years because of the fact that normal gasification
4 to electricity requires combustion which puts
5 dioxins and furans into the atmosphere.

6 In our initial step, we also can create
7 electricity without combustion. There is some
8 residual gas that passes through the bio reactor,
9 which could be combusted and mixed with natural
10 gas to create additional electricity, but as these
11 gasses will have been scrubbed and pass through
12 activated carbon filtration, they will burn 70
13 percent cleaner than natural gas.

14 The organic materials can be recycled,
15 and the main ash is non-hazardous. The waste
16 water is where any metals or other materials would
17 ultimately reside that would have to be handled
18 through waste water treatment, and there would be
19 a small amount of sludge that would go into
20 landfills, but that would have been material that
21 would otherwise have gone there anyway.

22 Our technology partners among others,
23 Carsons Corporation, one of the leading
24 engineering companies in the world, studied our
25 technology under non-disclosure for almost a year.

1 As a result, they came back and said we think you
2 have the solution, we would like to design, build,
3 and operate all of your plants in the United
4 States, and we have entered into a letter of
5 intent to do that.

6 For the past five years, Katzen
7 International, which is one of the leading,
8 probably the world's leading ethanol engineering
9 firms, it has done over 70 plants around the world
10 in the last 30 years, have been working with Dr.
11 Gaddy for the fermentation aspects of our
12 technology, and they will oversee that in all of
13 the plants that we build.

14 The technology status, we are currently
15 going through environmental approvals for the
16 construction of our first commercial plant. I
17 expect that somewhere in the area of three to four
18 plants may be in construction around the world
19 before the end of this year. We are moving
20 forward in that way.

21 I have a summary on the screen, but I
22 would like to make some other comments before I
23 close about the State of California. We need an
24 environment to introduce these technologies in
25 California. The Bio-Energy Producers Association

1 is pursuing AB1090, authored by Assemblywomen
2 Matthews, which would provide us with a level
3 playing field in the State of California.

4 It has three aspects to it. One is to
5 change the definitions of conversion technologies
6 under statute to provide an appropriate permitting
7 and expeditious permitting process for California.

8 I just want to just mention a couple of
9 the things that we are dealing with. AB 939
10 established diversion credits from municipalities
11 as an incentive to create the diversion of waste
12 products from landfills.

13 We received no diversion credits under
14 statute for renewable energy from conversion
15 technologies in this state. If you were to take
16 green waste and use it as a daily cover, put it in
17 a landfill, and use it as daily cover, you would
18 get a diversion credit.

19 If we were to take the same green waste
20 and produce electricity or ethanol using a
21 conversation technology, we would get no credit.

22 A plant like ours is a manufacturing
23 operation. It uses waste as its fuel, however,
24 the legislative code defines conversion
25 technologies as incineration transformation

1 systems.

2 In order to build a BRI plant in
3 California, we would have to go through the same
4 permitting process as is required for the siting
5 of a major solid waste landfill. Just to site a
6 project, just to put it on the map so that we
7 could begin the permitting process and the
8 environmental studies in Los Angeles County would
9 require an approval of the majority of the 88 city
10 councils in Los Angeles County, and it is a
11 process that would take at least two years.

12 As to a emission credits. In this
13 state, if we were to solve the problem of open-
14 field burning for ag for California's farmers, we
15 would receive no emission credits for that because
16 the Legislature has already mandated the cessation
17 of open-field burning.

18 You can combust waste in California to
19 create electricity without being subject to
20 regulatory oversight by the California Waste
21 Board. However, if we were to dispose of the
22 waste through environmentally sensitive conversion
23 technologies, we would have to permit in the same
24 manner as if we were a major landfill waste
25 disposal facility.

1 The question that you need to deal with
2 as a commission, is when does waste cease to be
3 waste and become fuel for a manufacturing process
4 that can bring low cost electricity and ethanol to
5 California.

6 Beneficial use needs to become a factor
7 in the regulatory process in California. We filed
8 AB1090 to try to resolve these problems to provide
9 the Waste Board with the discretionary opportunity
10 to issue diversion credits for conversion
11 technologies, to place conversation technologies
12 in the waste hierarchy as a preferred method of
13 disposal of waste which it is not in California
14 right now and also to change the definitions to
15 affect appropriate efficient permitting, but at
16 the same time complying with all state regulatory
17 requirements regarding air, water quality, and
18 other operations. We could not get that bill out
19 of committee this year. We could not get that
20 bill out of committee.

21 If you are looking for ways to
22 accelerate the assistance of industries like ours
23 in meeting the need for low cost energy in
24 California, we suggest that you discuss it with
25 the members of our Legislature.

1 We can assist in developing low cost
2 environmentally responsive methods for disposing
3 of waste. We realistically can forecast the
4 potential with our technology of providing up to
5 10 percent of the liquid energy requirements of
6 the nation from waste products. There are 1.8
7 billion tons of organic wastes in the United
8 States generated every year. We can provide up to
9 50 percent of the governor's goals for reduction
10 of emissions. We can provide a substantial
11 proportion of the alternative fuel requirements
12 that are your goal for the year 2020 through this
13 technology.

14 We believe it represents a massive break
15 through. \$9 billion has been spent in research on
16 renewable energy in this country over the last 20
17 years. Dr. Gaddy has achieved practically on his
18 own with three small grants from the Department of
19 Energy a massive breakthrough in providing us with
20 low cost energy for the country.

21 We can produce ethanol net of the sales
22 of electricity and net of the income that we
23 received from tipping fees for taking and
24 disposing of waste. We can produce ethanol at
25 price that will astound you. I thank you very

1 much for the opportunity to speak with you today
2 and trust that this technology will be something
3 that you will help us with to introduce in
4 California. Thank you.

5 PRESIDING MEMBER GEESMAN: Thank you
6 very much.

7 COMMISSIONER BOYD: Thank you, a quick
8 question. Does it take legislation to fix this
9 diversion credits issue or can the Waste Board
10 regulatory address this?

11 MR. STEWART: We believe that it will
12 require legislation and that is the area where the
13 greatest resistance is. As you have asked I would
14 just like to point out that legislation was
15 endorsed and supported in letter from such
16 organizations as the California State Association
17 of Counties, the League of Cities, the Southern
18 California Association of Governments, leading
19 labor unions in the State of California, the
20 California Agriculture Council, the Farm Bureau
21 Federation, the Rice Commission, landfill and
22 operators of materials recovery facilities, Los
23 Angeles, Riverside, Ventura, Santa Barbara, other
24 county boards of supervisors, the County
25 Sanitation Districts of Los Angeles County, the

1 list goes on and on.

2 Because of the opposition of just
3 several environmental organizations, and I believe
4 there is a concern about us being in competition
5 for the recycling waste streams in California,
6 because of that opposition, we could not get out
7 of committee.

8 I might also say that the Waste Board
9 passed a resolution 78, which endorsed conversion
10 technologies as a preferred method of disposing of
11 waste in California and were forced by the
12 Legislature to rescind that motion under threat
13 that one or two members of the Waste Board might
14 not receive confirmation of their appointments.

15 We have a situation in California that
16 needs to be turned around, and it needs public and
17 governmental support. I do want to thank the
18 Schwarzenegger Administration for its sincere
19 dedication to bio-energy as a means of changing
20 the environment in California. We are all faced
21 with tremendous problems because of the high cost
22 of energy and its impact on individual homes
23 budgets and the economy of this state.

24 We believe we can help to change that
25 environment and we simply want to be provided with

1 a level playing field on which to do it.

2 PRESIDING MEMBER GEESMAN: Thanks for
3 your presentation.

4 COMMISSIONER BOYD: I might add while
5 you are sitting down that Chairman Desmond and I
6 yesterday kicked out the state's bio-energy
7 working group to address issues like this, so
8 there may be some light at the end of the tunnel.

9 PRESIDING MEMBER GEESMAN: Who is next,
10 Dan?

11 MR. FONG: Before we go, I have four
12 additional presentations. We can continue on, or
13 you might want to entertain a lunch break.

14 PRESIDING MEMBER GEESMAN: Let me count
15 my blue cards. I have seven blue cards, several
16 raised hands, and people on the phone, one on the
17 phone. Why don't we take the telephone comment,
18 and then we will go to a lunch break.

19 MR. KANE: Hello, my name is Mike Kane.
20 I'm an electric vehicle and renewable energy
21 advocate based in Newport Beach, California. I
22 have a number of comments that I'd like to make,
23 however, I will primarily limit them to a document
24 that was called Alternative Fuels
25 Commercialization.

1 My wife and I made the decision several
2 years ago to start moving away from petroleum for
3 our local transportation. We get virtually all of
4 our local transportation a day from electricity.

5 We do that with two full function
6 electric vehicles, a Toyota RAV 4 electric vehicle
7 and a Chevrolet S10 Electric, as well as a
8 neighborhood electric vehicle that was produced by
9 Ford by a couple of years called the Ford Think
10 Neighbor that we use here around Newport Beach.

11 I found that the report really ignored
12 these vehicles. I didn't find that particularly
13 surprising given that they were lumped in with
14 several different technologies including truck
15 stop electrification, off-road vehicles including
16 forklifts and hydrogen. These are all areas worth
17 looking into, but they are certainly very
18 different areas with very different needs.

19 I also reviewed the list of stakeholders
20 and found that the vast majority of the
21 stakeholders are heavily invested in hydrogen
22 research, primarily funded by the state and
23 federal government. I believe that a reasonable
24 look at the technologies to include some
25 additional stakeholders that have other kinds of

1 interests.

2 In reviewing the report, I guess I would
3 say that I found it to be largely a look at what
4 would happen if we did nothing rather than a look
5 at what possibilities were for the future.

6 My wife and I, again, get all of our
7 local transportation needs from electricity. We
8 often travel well over a hundred miles a day in a
9 car. Our RAV 4 is two years old and has almost
10 33,000 miles on it, so we are not a low mileage
11 family.

12 By the way, of interest to this
13 Commission, all of the fuels for those vehicles is
14 provided in the form of electricity that is
15 produced by solar panels that sit on the roof of
16 our home.

17 I would like to suggest a number of
18 areas that could be areas of recommendation or
19 action looking into the future. The first one
20 that is largely the electric vehicles that are on
21 the road today resulted from the zero emission
22 vehicle mandate that was promulgated by the Air
23 Resources Board in the early '90's.

24 That mandate was largely walked away
25 from in 2003 by the Air Resources Board because

1 they viewed stronger promise in the area of
2 hydrogen fuel cells.

3 As noted recently by many sources and in
4 this report, however, we are unlikely to see any
5 hydrogen fuel cell commercialization for decades,
6 and there are some very significant barriers that
7 we have to get through to get there.

8 I think a recommendation to the state
9 EPA and to the Air Resources Board that they
10 review the mandate in light of the new information
11 on fuel cells would be high on the list.

12 Assuming it is going to take a while to
13 get to any regulation, I would also suggest that
14 the Commission look at some of the existing
15 vehicles that are on the road. Many of these are
16 on fleet leases. Many are actually be removed
17 from the road and destroyed. There are only a
18 couple of hundred of these that are owned and in
19 private hands. The bulk of the fleet leases will
20 be coming off the road over the next year. In
21 particular, if any of the commissioners have
22 interest in this, I suggest you contact Toyota,
23 who has the large bulk of these and is in the
24 process of removing fleet leases as they come due
25 over the next year.

1 Another area that would be worth looking
2 into I believe is grants. There are a couple of
3 electric vehicle producers and technology
4 companies here in California, and there are quite
5 a few companies in California that do battery
6 technology research and development. These are
7 both areas that would be ripe for the state to
8 provide some seed money along with some guarantee
9 of fleet level purchases that would allow a jump
10 start to this market.

11 Certainly incentives helped here a lot.
12 There were incentives under the CAL Moyer program,
13 and I believe these should be continued. They
14 have largely lapsed, however, that is a moot point
15 at the moment because there are no vehicles
16 available.

17 Many government fleets have used these
18 vehicles and many large private fleets, for
19 instance, Southern California Edison here in
20 Orange County in Southern California have large
21 fleets of these vehicles, but they are largely
22 coming off the road on the fleet lease programs.
23 We could certainly work with the auto companies
24 with regulations to try to keep these on the road
25 and add to them.

1 Lastly, for full function electric
2 vehicles, charging infrastructure that is an area
3 that needs a lot of help. It was noted in the
4 report that California has the largest alternative
5 fuel infrastructure in the country. This is
6 certainly true for electric vehicles. The number
7 of charging stations is actually larger than was
8 on the list. The list is close to 600, however,
9 only about 43 percent of these are actually usable
10 by the bulk of the vehicles on the road which are
11 the Toyota RAV 4's and the Nissan Ultra's which
12 are both small paddle inductive chargers.

13 A full 31 percent of the vehicle
14 charging stations are completely obsolete and
15 useable by only a small handful of vehicles, and
16 probably another 10 percent of those are currently
17 out of service and have been out of service for a
18 long period of time due to a lack of funding to
19 effect repairs.

20 Finally, I think I would like to speak
21 neighborhood electric vehicles. I have one of
22 these, and I find it fairly useable for us.
23 However, there are certainly a number of actions
24 that would have to be taken to make this a viable
25 alternative for on-road use in California.

1 These are largely supplemental vehicles,
2 so they are in addition to existing on-road
3 vehicles. This means that there are a number of
4 issues that have to be overcome. In addition to
5 the cost of the vehicle, you've got the cost of
6 registration and insurance for it.

7 One of the primary ones that is off
8 street parking, and in many cases, there is no off
9 street parking for an additional vehicle. A look
10 at some municipalities have provided free street
11 parking for these vehicles, but certainly that is
12 an area that many others could look at.

13 The primary obstacle to use of these is
14 the way our roadways are structured here in
15 California. In an older area like the area I live
16 in or maybe an area like Santa Monica or downtown
17 Berkeley, these vehicles are pretty useable.
18 There are quite a few low speed streets,
19 residential neighborhoods where you can get
20 around.

21 However, in most suburban settings that
22 have been built since the 70's, these vehicles are
23 not an option. If you look at an area here in
24 Southern California let's say Huntington Beach,
25 this is largely groups of tracts that are

1 connected by high speed roadways which make these
2 cars virtually unusable. Any effort to try to
3 commercialize and increase the use of these
4 vehicles has to look at the layout of our roadways
5 and try to look at things we could do to make them
6 more useable by low speed vehicles.

7 With that, I'd end my comments. I'll
8 take any questions if there are any.

9 PRESIDING MEMBER GEESMAN: I had one,
10 Mr. Kane, and that is if you could elaborate on
11 your comment about the obsolescence of a
12 significant portion of the exiting recharging
13 infrastructure. What has caused that
14 obsolescence?

15 MR. KANE: There are a couple of things.
16 There are three different charging standards that
17 have been promulgated by the industry over time.
18 There are two inductive standards, one called a
19 large panel and one called a small panel which are
20 largely self describing. These don't make a
21 physical contact between the electrical
22 components, but rather the electricity is moved
23 inductively through up through the air.

24 Then there is a conductive standard that
25 is generally referred to after the company that

1 promulgated as AVCON. 31 percent of the stations
2 that are out there today use the large paddle
3 inductive which was used on General Motors cars.
4 Those have virtually all been removed from the
5 road. I actually have one of these, but I am
6 amongst probably only a dozen people in the state
7 that have them.

8 All of the EV 1's are off the road now.
9 I think there is one left at the Air Resources
10 Board that is due to go back to GM shortly.

11 The S10 electric pick up trucks, there
12 were about 40 of them left on the road in the
13 country, and less than half of those are here in
14 California. Those are the only vehicles that can
15 use the large paddle inductive charges which make
16 up a third of the total.

17 The other issue is lack of funding
18 really, especially in Southern California. South
19 Coast Air Quality Management District has funds
20 set aside to go upgrade and repair stations, but
21 that work has largely been put on hold and hasn't
22 been funded. At least the funding hasn't gone to
23 the contractors that would do the work so that
24 those stations can be upgraded or repaired.

25 PRESIDING MEMBER GEESMAN: Thank you.

1 Other questions for Mr. Kane?

2 (No response.)

3 PRESIDING MEMBER GEESMAN: Thank you for
4 your comment, Mr. Kane.

5 MR. KANE: Thank you.

6 PRESIDING MEMBER GEESMAN: I'm sorry, we
7 do have one other question.

8 MR. KOYAMA: Okay, I thought I'd
9 response to some of these issues that you brought
10 up. By the way, thank you for reading the
11 Alternative Fuel Commercialization Report. This
12 is Ken Koyama with the Energy Commission.

13 You mentioned that we did not include
14 any electric vehicles, that we virtually ignored
15 the battery electric vehicles. We did ask
16 stakeholders on their position on electric
17 vehicles. It was pretty clear and apparent to us
18 that their focus was going to be on hydrogen, fuel
19 cell vehicles and some of these other types of
20 electric vehicles that would be commercially
21 applicable in the near future. We didn't ignore
22 it, we just wanted to report what the industry and
23 the stakeholders had indicated to us.

24 With regard to removing old electric
25 vehicles from the road, we are aware of this. We

1 also actually probably have very little to say
2 about it since this is an issue that the auto
3 companies have decided to do with their electric
4 vehicles that is on the road. It is not a decision
5 from a government standpoint. They apparently
6 believe that cannot no longer support those
7 vehicles, therefore, to remove any of their
8 liability issues, they decided to take the
9 vehicles off the road.

10 You are absolutely accurate about the
11 infrastructure issues. We do have probably more
12 charging stations than we do have electric
13 vehicles or battery electric vehicles. The
14 problem with putting additional funding in for
15 these additional charging stations is we probably
16 don't have any need for them at this time. So,
17 unfortunately, the number of charging stations out
18 there is likely to decline rather than increase
19 unless it is for some of these more specialized
20 electric vehicles that we indicated in the report.

21 We did indicate that the neighborhood
22 electric vehicles has certain specific purposes.
23 We certainly agree that the land use patterns in
24 California don't make neighborhood electric
25 vehicles a very desirable way to get around town,

1 but there are probably portions of California and
2 certain neighborhoods that are designed to allow
3 for neighborhood electric vehicles that could
4 potentially use these vehicles to a very
5 significant degree.

6 So, those are my responses.

7 MR. KANE: Ken, one response back. I'm
8 not surprised given a list of stakeholders at the
9 input that you got. I would like to suggest that
10 the list of stakeholders in the future be
11 expanded. I would love to be involved, I would
12 love to throw a few other names at you of people
13 that are involved in stakeholders that have been
14 in front of the Air Resources Board in the past
15 that I believe would be experts on electric
16 vehicle technology or battery technology that
17 would be useful inputs to the staff reports in the
18 future.

19 MR. KOYAMA: Yeah, we will be happy to
20 include those names in the future.

21 MR. KANE: I'll send you my contact
22 information off line.

23 MR. KOYAMA: Okay, thanks.

24 MR. KANE: I'm sorry, Ken, what was your
25 last name?

1 MR. KOYAMA: Koyama, K-o-y-a-m-a.

2 MR. KANE: Thank you.

3 PRESIDING MEMBER GEESMAN: It is 12:10,

4 we will reconvene at 1:10. Thank you.

5 (Whereupon, at 12:10 p.m., the workshop

6 was adjourned,, to reconvene at 1:10

7 p.m., this same day.)

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1 AFTERNOON SESSION

2 12:15 p.m.

3 PRESIDING MEMBER GEESMAN: At least a
4 couple of the people that have given me blue cards
5 may have airplane commitments this afternoon. If
6 that is in fact the case, I would like to take
7 anybody that's got a time constraint first.

8 My own guess is we will probably be done
9 at about 3:00.

10 MR. FONG: Mr. Reynolds, you said you
11 had some remarks you wanted to make?

12 MR. REYNOLDS: Good afternoon, my name
13 is Bob Reynolds, and I am here today on behalf of
14 the E Diesel Consortium and the Renewable Fuels
15 Association. I appreciate the opportunity to
16 comment on ethanol's role in reducing California's
17 petroleum use.

18 Let me start by commending the
19 Commission on this with the input from
20 stakeholders. We have been very pleased with the
21 cooperation between the stakeholders and staff
22 even though some of the stakeholders do have
23 somewhat competing goals in some cases. I've had
24 the opportunity to participate primarily, you
25 know, in the ethanol work group, which is staffed

1 CEC's Mike McCormack, and I would be remiss if I
2 didn't comment on his dedicated effort and long
3 hours in the process when many of us couldn't do
4 some of the things we had committed to do because
5 of short deadlines, and then he would pick up the
6 slack for us.

7 While my participation in that group has
8 been primarily on behalf of the E Diesel
9 Consortium, I am a member of the Renewable Fuels
10 Association Technical Committee, so our interest
11 really extends to all the energy related uses of
12 ethanol.

13 I have, by the way, submitted my
14 comments to the docket and e-mailed a copy to Dan
15 Fong, so I am going to kind of summarize here for
16 the sake of time, but obviously I think we have
17 overcome the misperceptions in the past that maybe
18 ethanol would not be in adequate supply. In fact,
19 today I guess we could say in a state of over
20 supply. We are about 3.7 million gallons of
21 production right now, and we will exceed 4 billion
22 or 4.2 billion gallons by the end of this year or
23 early next year.

24 I believe it was Commissioner Boyd that
25 posed some questions about E10 use in California

1 and what some of the obstacles are challenges
2 were, and I wanted to comment briefly on them. If
3 we were to be able to go to 10 percent, that would
4 obviously add 4.3 percent volume to the gasoline
5 pool or about 70 percent of that on a BTU basis.

6 We would be doing that with a product
7 that is currently about 40 cents per gallon
8 cheaper than gasoline, even before applying the
9 tax credits, 91 cents per gallon cheaper if you
10 apply the tax credits.

11 Of course, the problem is this must be
12 done in a way that insures that air quality is not
13 compromised, and that is where these complexities
14 arise. The Air Resources Board is currently
15 updating their predictive model, which will likely
16 be finalized by the end of this year.

17 Simultaneously, ARB is also updating
18 their (indiscernible) inventory models with a
19 completion date targeted for this summer.

20 The first issue that arises is that the
21 predictive model -- many times some in our
22 industry say, well, California doesn't let you
23 blend to 10 percent. It is not that California
24 doesn't allow that, it is just that there are
25 economic penalties in the predictive models

1 because the predictive model shows that NOX
2 emissions increase above the 5.7 percent oxygen
3 level.

4 Our industry has argued for some time
5 that we believe that is not right, we adhere more
6 to the EPA complex model. There are differences in
7 the models with technologies and percentages that
8 are employed and the way they are treated and so
9 forth, and that is why there is a difference.

10 ARB is looking at this issue. There has
11 been some data submitted by the Auto Alliance with
12 regards to NOX emissions on Tech 5 vehicles and
13 there is some more of the report of which is being
14 worked on now with the CRC Riverside CERT that,
15 well, we don't know the outcome of the CRC work
16 yet, but it appears that there is not a
17 significant NOX penalty of going to a higher
18 oxygen level on the Tech 5 vehicles. Currently
19 Tech 5 is in the model treated like Tech 4 as I
20 understand it for that purpose. Modeling is not
21 my specialty.

22 PRESIDING MEMBER GEESMAN: Tell me what
23 Tech 5 means versus Tech 4?

24 MR. REYNOLDS: Tech 5 would be vehicles
25 from 2002 forward, '95 to 2005. Okay, so a

1 significant portion of the fleet.

2 The second issue that the ARB is having
3 to deal with right now pertaining to ethanol which
4 you are probably aware of is that the CRC did an
5 emission or an evaporative emissions permeation
6 study that was completed last year that showed a
7 more significant increase in emissions permeation,
8 permeation emissions, things that work their way
9 through the tank walls and fuel hoses than ARB at
10 presently or previously thought it would be.
11 Moreover, not only did the ethanol emissions
12 increase, but also allowed more of the
13 hydrocarbons to come through.

14 Any mitigation strategy to address that,
15 it is sort of two fold thing. Obviously one is in
16 the emissions inventory itself, but because of
17 ARB's statutory requirement, that CBG 3, which is
18 the ethanol blend you are using now be as clean as
19 CBG2, they must find a way within the sort of
20 within the fuel arena to address that.

21 Perhaps some of these issues with Tech 5
22 will help with the RFA has advocated that the CO
23 reactivity be reviewed currently. California uses
24 a reactivity factor of .57 which means that 57
25 tons of carbon monoxide is equivalent to one ton

1 of hydro carbons.

2 The EPA and other studies have indicated
3 that, in fact, reactivity of CO in contributing to
4 other than formation is much greater than that.
5 With the EPA using a number of around 15 or
6 advocating that number, I guess I should say in
7 the federal register.

8 This is a very complicated issue as you
9 can imagine because everybody's got their science
10 and beliefs of the science that they have, but
11 obviously the Commission will need to work very
12 closely with ARB with these particular issues.

13 I know that in the past, sometimes our
14 industry has been viewed as perhaps a little bit
15 of an adversarial role with ARB, and that has not
16 always been their fault. Sometimes we get an
17 overly aggressive, but we hope to work very
18 closely with these issues. We believe that they
19 can be resolved. We are not asking that the
20 science be twisted, we are just asking that all of
21 it be considered, a decision be rendered between
22 all of the available science of those particular
23 issues.

24 I have actually attached to my written
25 comments a few comments pertaining to permeation

1 and CO that was submitted at a recent ARB
2 workshop. Rather than to go into all of those
3 points, those are available, they are in the
4 docket.

5 With regards to E 85, you've got about
6 200,000 FFVs on the road right now and about
7 30,000 being added each year. As you know, most
8 of these aren't operating on E 85 because of the
9 lack of infrastructure. Frankly the current
10 driving course for flexible fuel vehicles going
11 out in the future is in question because of
12 whether or not the CAFE credits will be renewed,
13 and with the growing trend to make PZEVs to meet
14 the ZEV requirement, it is unclear if the auto
15 makers will be able to continue to offer FFVs, so
16 that is one of the uncertainties right now that is
17 dampening E 85 infrastructure expansion as well as
18 a concern to the auto makers.

19 I wanted to mention briefly E Diesel
20 blends as warrant in those presentations and
21 perhaps it is because it is somewhat of a longer
22 term effort than E10 or E 85 --

23 PRESIDING MEMBER GEESMAN: It is
24 addressed in the staff report though.

25 MR. REYNOLDS: Okay. The consortium has

1 made some projections on highway diesel in
2 California and we offer those actually in two
3 submissions to the docket including this one.

4 It is obviously a long term effort.
5 There are several million dollar project going on
6 with John Deere right now to address some of the
7 open technical issues. We've done some Tier 1
8 emission testing. There will be some other Tier
9 1, Tier 2 type things we need to do with the US
10 EPA before we can do any type of commercial
11 introduction as well as fully address the issues
12 of the OEMs with regards to materials
13 compatibility and durability and those types of
14 things.

15 We believe that E Diesel can make a
16 contribution, although we believe it will be in
17 some centrally fueled controlled fleet type
18 applications, not something that would be widely
19 available at a retail facility.

20 A couple of things that, additional uses
21 I want to mention, just so you are aware of them,
22 the effort to adopt an aviation grade ethanol
23 which is primarily driven as a aviation grade
24 gasoline still has lead in it, and private
25 aviators are trying to find a high octane

1 replacement for when lead is phased out of that,
2 that would enable them to continue to operate
3 their aircraft without detuning them.

4 It is a very small market, but I do want
5 to mention it because there is an effort within
6 the ASTM to develop an aviation grade ethanol
7 spec, and it would be similar to E 85, but
8 probably much more detailed because of the use.

9 Finally, I wanted to mention ethanol as
10 a path to hydrogen. Obviously we couldn't in the
11 report make projections of what kind of
12 contribution ethanol could make to hydrogen
13 because it is very difficult even to render the
14 fuel cell in hydrogen projections right now.

15 Ethanol can be reformed into hydrogen.
16 The technology has been demonstrated by GTI, and I
17 can tell you that the RFA is in negotiations and
18 discussions with a couple of major fuel cell
19 process or fuel cell manufacturers on a couple of
20 demonstration projects.

21 One thing that I would encourage the
22 Commission to look at in this area is that as I
23 understand it, and I am not a fuel cell expert,
24 but the CPUC has different designations of levels
25 of performance with renewable that meets certain

1 emission standards being a level one.

2 The fuel cell industry seems unclear if
3 ethanol from grain is designated as a level one in
4 that category and we have not had time to follow
5 up with the Utilities Commission yet to see if
6 that can be easily resolved, but I think you would
7 perhaps see a few ethanol to hydrogen or ethanol
8 fuel cell type demonstration projects more quickly
9 if we could get that resolved.

10 Finally, the RFA believes that obviously
11 regardless of where your ethanol comes from, there
12 are a number of public policy benefits to be
13 derived from domestic ethanol production, but it
14 would obviously be of more of a public policy
15 benefit to the state for it to come from some in-
16 state production.

17 You have one plant recently completed
18 permitting, Calgren Renewable Fuels, which will be
19 sited near Pixley. We understand from various
20 articles and so forth they have written, the
21 differences I think between getting a permit, a
22 plant permitted in the Midwest versus the more
23 complicated process here.

24 We don't expect anybody to change that
25 process. We realize that you have different

1 issues here. One thing that we would suggest just
2 to make it a little more ethanol friendly is that
3 perhaps like a template from what they had to go
4 through, I understand there were more complicated
5 things with the grain dryers for instance as far
6 as dust levels, and perhaps a template developed
7 off of that and maybe an in-state contact person
8 to help walk perspective plant builders through
9 some of those kinds of things. In many cases,
10 these are agricultural cooperatives or smaller
11 business men that find the processes even in
12 Indiana daunting, much less some of the permitting
13 processes here.

14 Finally, and I know that this was
15 commented on, and I think Dan listed it perhaps as
16 something about inconsistencies in policies of the
17 state. Despite that fact that ethanol --
18 California uses more ethanol than any state in the
19 United States, but quite frankly you use it
20 because you are forced to under the current regime
21 of the way things are.

22 We don't know what that use level
23 necessarily be if it were not for that, but we
24 believe there would still be a significant use for
25 a number of other reasons such as octane and

1 volume replacement, but it leaves, I think,
2 especially for somebody looking at perhaps
3 thinking at an in-state production facility. They
4 see different agencies that perhaps have a
5 different perception of ethanol.

6 From the ethanol industry's perspective,
7 the CEC is viewed as ethanol friendly. I would
8 say the ARB is probably generally been -- I am
9 speaking for the industry only -- viewed as
10 somewhat not sympathetic to ethanol causes,
11 although today I would say that certainly the
12 Executive Director of the Association feels much
13 more comfortable while we might not always like
14 the answers, we do believe our issues are being
15 considered.

16 Other examples are the waiver request,
17 another one of those antagonistic situations where
18 we try to defend our position, and the state
19 obviously tries to pursue the course of theirs
20 that are not always in agreement. Issues, for
21 instance, involving the California delegation on
22 federal legislation that pertains to ethanol.

23 When somebody in the California
24 designation opposes renewable fuel standard that
25 would give your own state more flexibility for the

1 refiners to use the ethanol as they saw fit rather
2 than as they are currently mandated to do under
3 the oxygen requirements, it kind of baffles us as
4 to why that would be the case.

5 Those are just some of the issues that
6 we perceive as being very important. The most
7 important to us probably being the E 10 issue
8 because that is the low hanging fruit here. I
9 mean you can increase your ethanol use by about
10 .55 billion gallons a year if we could use E10 and
11 do it in a way that is environmentally sound and
12 that accomplishes the objectives of the state,
13 both with regards to energy and air quality.

14 With that, I thank you.

15 PRESIDING MEMBER GEESMAN: Thank you
16 very much, Mr. Reynolds. I think that our
17 interests particular in E 10 are principally to
18 try and get as many of the facts on the table as
19 possible. I recognize a lot of other things are
20 going on in other fora, and I don't want to expand
21 our horizons beyond what is immediately in front
22 of us as issues are concerned, but I do think that
23 we have an important in trying to document both
24 what the concerns are and potentially what some of
25 the solutions are as well, and hopefully we will

1 be able to make a contribution in that area in
2 this year's report cycle.

3 COMMISSIONER BOYD: I won't show the
4 scars on my back.

5 MR. FONG: Were there any other speakers
6 with relatively modest comments that we might
7 entertain at this time. I just want to make sure
8 that we don't push somebody up against the wall
9 and they are anxious about another appointment or
10 a plane leaving.

11 PRESIDING MEMBER GEESMAN: Modest
12 referred to likely time required, not content.

13 MR. FONG: If not, we will continue with
14 some of the prepared presentations that people had
15 previously provided and are probably anxiously
16 awaiting to get up here.

17 So, I will go to the representative from
18 BOSCH. I'm sorry, we are experiencing technical
19 difficulties. We are going to seek some
20 assistance here. Someone from Business Services
21 should be here shortly, so we will just have to
22 hang on until we understand what happened to the
23 system since we broke for lunch.

24 PRESIDING MEMBER GEESMAN: Should we
25 move then to somebody that doesn't have visual

1 aids.

2 MR. FONG: That is a possibility. Mr.
3 Wuebben.

4 MR. WUEBBEN: Thank you very much. I'm
5 Paul Wuebben the Clean Fuels Officer for the South
6 Coast Air Quality Management District, and it is
7 really a pleasure to participate in the meeting,
8 so thank you for this opportunity.

9 I just wanted to provide some brief kind
10 of general comments and maybe address a few
11 assumptions and make some fuel specific comments
12 as we look at these documents.

13 Generally, I think we would want to
14 commend the staff that there has been a lot of
15 analysis done. It really provides a useful
16 starting point, but with that, I think that we all
17 know that there are certain facts and changing
18 facts on the ground really in terms of current
19 prices, trends, etc. that we need to take account
20 of.

21 Since January, Californians let's say if
22 you assume that they paid at least 25 cents a
23 gallon for their gasoline compared to the first
24 five months of last year, that represents \$1.25
25 billion just for the first five months. Clearly,

1 there have been some very significant recent
2 changes.

3 While your staff may be optimistic in
4 assuming a relatively slow growth rate of .9
5 percent, we know that EIA is out there with
6 perhaps a twice as high growth rate assumption,
7 and we also know that horse power and weight
8 trends in the motor vehicle market place are
9 continuing to go up. So, we urge that you kind of
10 look at all those factors.

11 While you may be assuming supply
12 adequacy through the medium term, there are others
13 out there making some fairly credible
14 observations. Goldman Sachs, Matt Simons, the
15 Venezuela Minister of Energy, quite a few out
16 there making what they consider candid comments
17 about the petroleum peak possibly occurring this
18 year with respect to global production. I don't
19 have any personal knowledge of that, but we know
20 that those are credible individuals.

21 Most recently, there was a report by the
22 general accounting office, just reported last week
23 that I would suggest that you take a look at.
24 Essentially, they've said looking in the future
25 daunting challenges lie ahead in finding,

1 developing, and providing sufficient quantities of
2 oil to meet projected global demand. There you
3 have a pretty salient observation by the GAO.

4 I would really like to turn then to some
5 of your key assumptions as we look at the
6 documents, and we will be providing some more
7 specific comments as we go forward, but I think
8 that it is very important to look at both the
9 absolute and relative fuel assumptions that you
10 are making because the high price point that
11 you've assumed at 2.26 I believe would be a
12 tremendous bargain, not only today, but as you go
13 out into the foreseeable future.

14 Just last week I went on -- I've looked
15 at the Nymax future, and you cannot buy a futures
16 contract for oil below \$50 between now through the
17 year 2009. That is what the marketplace is
18 telling us. So, it would seem to be prudent that
19 at a minimum of \$3.00 scenario should be addressed
20 just to deal with the virtual inevitability that
21 by the time the next documents are out there,
22 \$3.00 may in fact be quite common.

23 Another aspect of this price
24 consideration is the relative price environment.
25 These relative comparisons that are made in the

1 analysis so far are very benign comparisons.
2 Specifically while diesel today has a greater
3 price relative to gasoline of about 15 to 20 cents
4 a gallon, the differential price in the analysis
5 actually assumes diesel a penny cheaper than
6 gasoline. So, that would definitely tend to skew
7 the analysis to some degree.

8 Another area we would like to just note
9 is that the rebound effect has certainly been a
10 concern. We know that it has been something your
11 staff has thought of at some length. I think it
12 would be fair, however, to say that there are a
13 number of quarters that consider that a fourth
14 order concern, not a first order of fact. So,
15 that as you go forward, you may not want to put as
16 much emphasis on that rebound effect because it
17 does have some synergistic, almost counter
18 intuitive implications if you roll it out through
19 all of the interfuel comparisons.

20 One other thing I would like to say
21 about the synergistic effect of all of these
22 assumptions is that they have an affect of really
23 constraining of natural gas for example and
24 hybrids as you go forward because you've got this
25 almost perverse counter cyclical effect from the

1 pricing differentials.

2 While your staff may be predicting that
3 there will be fewer hybrids in 2025 relative to
4 new diesels in the marketplace, I can't help but
5 make note of today's announcement by Toyota Motor
6 Company that they intend to hybridize the Camry as
7 their latest addition to hybridization trend.
8 Those trends I believe are becoming an extremely
9 important one, and perhaps you should be much more
10 bullish on their prospects.

11 One last aspect in terms of assumptions,
12 it seems to be analytically an assumption that
13 there is no direct value of diversification. I
14 think as we've worked in this field for ten or
15 twenty years, we increasingly recognize that there
16 is an inherent value to diversification. In fact,
17 it may not be an exaggeration to say that we are
18 one serious terrorist event from a catastrophe in
19 terms of transportation infrastructure in the port
20 regions, for example.

21 With respect to fuels, let me just go
22 through some brief comments. I think it would be
23 reasonable to view the current analysis as being
24 fairly optimistic with respect to diesel. We
25 think it is very crucial that at the same time

1 while we may view that diesel has a role to play
2 that we also recognize that it is a uniquely
3 designated by the Air Resources Board as a toxic
4 air contaminate, diesel particulate has known
5 toxicity affects, and I think arguably, one could
6 maintain that the perhaps at a single most
7 important analytical result related to
8 transportation fuels in the last decade, in my
9 estimation at least, the estimate that we made
10 that 70 percent of airborne cancer risk has been
11 associated with diesel exposure. I am sure you've
12 heard that statistic, and I believe it bears
13 repeating.

14 While bio-diesel may have some Nox
15 issues, there is a need to address that. Some
16 specification issues, we are very interested in
17 working with your staff to find means of
18 addressing those.

19 We should also bear in mind that the EPA
20 just in the last several weeks made a decision not
21 to certify a 2006 model year diesel that was
22 predicated on the use of a metal additive that
23 they found analogous to the MMT metal additives,
24 so I think that really requires a very careful
25 kind of precision in looking at that diesel issue.

1 Relative to hybrids, I think there is a
2 degree of pessimism that perhaps that as I
3 mentioned, there are fewer hybrids than diesels,
4 and that there does appear to be some tremendous
5 acceleration in terms of the transmissions that
6 are expanding with respect to that, the engine
7 sizes that are accommodating that, getting into
8 the heavy duty arena. We are glad you segmented
9 the heavy duty hybridization, but you may want to
10 be a bit more hopeful in that regard.

11 Then turning to one of my favorite
12 subjects, ethanol, I have had the opportunity to
13 comment in front of the Commission on this before,
14 but our agency, as you know, has joined with the
15 Air Resources Board and their concern about and
16 the need for a waiver based on air quality
17 considerations. We are very concerned about the
18 permeation effects which were recently identified
19 as possibly up to 100 tons per day statewide, 25
20 to 35 tons per day in the South Coast Air Basin,
21 those are very significant VOC emission, the
22 numbers.

23 We are also quite struck by the finding
24 that was made in the staff report in the staff
25 presentation today that the technology solutions

1 such as new vehicle substitution and rolling those
2 new vehicle technologies into the fleet, those
3 would not have an ability to fully mitigate those
4 permeation emissions for a 20 to 25 year period.

5 That is really not a solution. It is
6 maybe one component, but the role of FFVs as E 85
7 compliant rather than predominantly or virtually
8 all the time running on gasoline, maybe that is a
9 way to address some of those ethanol objectives
10 that you also have.

11 We do think that there is an important
12 need to keep as a primary focus the need to
13 mitigate to those emissions going forward.

14 The other last observation, I guess,
15 that is appropriate is that the E 10 scenario that
16 you have is currently something that falls outside
17 what would be certifiable under the predictive
18 model that ARB has as we understand it. It is
19 intellectual interesting, but if it doesn't comply
20 with the current set of regulations, I'm not sure
21 how far you could go before having to seriously
22 consider that there is some emission constraints
23 operative there.

24 With respect to natural gas, we do think
25 it is extremely important that we bear in mind

1 that the largest penetration of alternative fuels
2 currently has really been made in the heavy duty
3 and to some degree in the light duty segment of
4 natural gas vehicles.

5 In Europe we see have huge growth in
6 light duty vehicles with perhaps with some
7 additional push that we could bring on additional
8 light duty product. We do know that, for example,
9 there are important players, such as BayTech and
10 BAF that are doing light duty certification.
11 Crown Victoria has the SULEV, the E450 as natural
12 gas vehicles. Perhaps some encouragement and
13 engagement to bring on some of the additional
14 product that's available in Europe could be
15 undertaken.

16 In the heavy duty arena, we know that
17 all the natural gas heavy duty engines that are
18 put in the market place have lower NOX emissions
19 and are cleaner than their diesel counterparts.
20 We are very happy that the penetration of those
21 vehicles is probably double if not closer to
22 triple than census numbers that you have in your
23 current report. I believe the table refers to
24 2002 snapshot, and we respect that you needed to
25 take some point in time, but in the last 2 1/2 to

1 three years, there has been a substantial
2 continuing increase with respect to natural gas.

3 We think that there is a very important
4 need to try to build all of the alternative fuels
5 as we go forward.

6 One last area, I guess, just to briefly
7 comment is areas of opportunity to enhance what
8 you've done because I mentioned looking at a high
9 price petroleum price scenario is probably
10 incumbent at this stage. Looking at increased
11 natural gas, both heavy duty and light duty would
12 be very relevant. Considering a full
13 hybridization scenario, I think, would be well
14 advised given that there has been a tremendous
15 growth in the technology and why not get ahead of
16 that curve rather than essentially being following
17 it.

18 With that in mind, maybe thinking
19 outside the box or thinking in the most
20 synergistic way, you do have a hybrid scenario,
21 you have a plug-in hybrid scenario, but you don't
22 have a flexible fuel hybrid plug-in scenario. A
23 plug-in hybrid such as an FFE with all those
24 components could give you the ultimate type of
25 fuel diversification and possibly low greenhouse

1 footprint.

2 With that, I just want to conclude that
3 we are very glad that this is a forum for us to
4 exchange ideas about how to build the alternative
5 fuel marketplace. We join you in struggling with
6 a lot of the commercialization barriers. We also
7 struggle and do see bio-diesel and diesel may have
8 some roles to play as we go forward because of
9 volumetric kind of supply issues or what have you,
10 but there is certainly an important need to
11 balance those kind of fuels with our concerns
12 about emissions and toxicity.

13 With that, I appreciate the time and
14 always appreciate the hard work of your staff.

15 PRESIDING MEMBER GEESMAN: Paul, thanks
16 for being here. I did have a couple of questions
17 from your remarks. One is I wonder if you could
18 elaborate on what you were saying about a rebound
19 effect and fourth order versus first order
20 concerns.

21 MR. WUEBBEN: Sure, I would be glad to.
22 At least the way I understand the staff's
23 analysis, that there was an increase in the
24 elasticity that was assumed from a 10 percent to a
25 20 percent. I don't know why just to

1 (indiscernible) that there would be some increase
2 in the elasticity with all the other factors. I
3 mean we hold it constant for all the other
4 analysis, but for some reason -- the other thing,
5 I think that when people are buying the high
6 efficiency vehicles, it is hard for me to believe
7 that one of the first, second, or third questions
8 you ask as you double your fuel economy say going
9 from a Camry to a Prius, whether or not you are
10 asking yourself, gee, am I now going to be able to
11 afford the additional driving experience.

12 The reality of urban life and motor
13 vehicle use, I believe at this juncture, is that
14 congestion affects occur not just in peak hours,
15 but in off peak hours. On the idea of casual
16 driving, I think has changed structure or form if
17 you will in the last 20 to 30 years. Joy riding
18 and all of that, this whole notion that we are
19 just waiting for the price signal to increase the
20 number of vehicle miles, I think people are
21 spending a lot were hoping to get out of their
22 cars as much as possible. They consider any
23 amount of driving to be really a transaction cost
24 to their ultimate destination.

25 I think because it has this such a major

1 impact on changing the relative benefits in those
2 calculations. It has this effective skewing it,
3 and if you dampen that effect say by considering
4 it only as maybe 20 to 30 percent of what you are
5 estimating in terms of some slight increase in the
6 demand for driving, but I guess I've just never
7 been convinced that there is a strong desire to
8 constantly increase the number of miles driven.
9 Particularly given that there has been a
10 relatively low demand or the price elasticity
11 effect historically that you can increase prices
12 from \$1.50 to \$2.50, and it sure didn't seem like
13 VMT was backing off substantially. I guess it is
14 really just maybe a holistic, hedonic kind of
15 index kind of a concept, but I do think there is a
16 strong rationale for taking some real caution
17 rather than assuming that by increasing fuel
18 economy, you are going to have is a benefit that
19 may almost counteract the benefit of fuel economy.

20 I think that would be completely the
21 wrong conclusion. As I look at fuel economy, the
22 single greatest opportunity and we got this out of
23 the AB 2076 and out of the SAP report really, the
24 single greatest opportunity is to defer fuel
25 demand is by your fuel economy measures. We are

1 really pleased to see the governor has written the
2 letters he has to support the doubling.

3 Any analysis that tends to cast some
4 shadow of doubt that is not firmly wetted in an
5 analytical tradition, particular given that it is
6 2002 data set you are looking at. While in 2002,
7 there might have been this analytical set of
8 results, as we've noted, the whole price
9 environment and revealed preferences are far
10 different than stated preferences.

11 There was an analysis that was done in a
12 dissertation of UC Davis student that
13 differentiated those models. So, your CALCAR
14 model is at its heart a revealed preference model.
15 With that, it should I think be taken with a bit
16 more caution than if it were otherwise.

17 PRESIDING MEMBER GEESMAN: You might
18 send us the UC Davis study that you just
19 mentioned. My recollection is that the last time
20 we did this, we were basing it not on 2002
21 surveys, but 1992 surveys. Frankly, I had a
22 serious concern about that. I'd like to see us
23 use the most current information available to us,
24 although I will acknowledge 2005 feels a lot
25 different than 2002 did.

1 As it relates to natural gas, are there
2 things that state government should be doing that
3 would more greatly expand the penetration of
4 natural gas into the transport sector.

5 MR. WUEBBEN: Yes, we certainly think
6 there are tremendous opportunities in fixed in a
7 certain captive fleets. In the heavy duty arena,
8 those governmental fleets, we've seen a tremendous
9 conversion in our own air basin, both transit and
10 non-transit. I mean the rough use truck and
11 street sweeper, so there is a growing number of
12 niches that those apply to.

13 The second thing that has a tremendous
14 relevance is that manufacturers constantly come to
15 us saying, gee, it is really hard for us to
16 struggle to just meet the South Coast need, and we
17 need a higher volume, and obviously could
18 represent that, and so the value or the role of a
19 bully pulpit of perhaps garnering additional
20 demand, pooling that demand, setting some targets,
21 could be very useful.

22 Engaging the OEM's to find out what
23 kinds of incentives they would need to increase
24 their production. Of course, we are always
25 interested in expanding the horse power and tork

1 ranges of those engines, so working with us or
2 even on your own to expand the infrastructure and
3 demonstrations of some of the leading edge
4 technologies.

5 We have some R & D projects going on
6 that aim at meeting the 2007 .2, the 2010 standard
7 in 2007, and the manufacturers are very bullish in
8 that regard, but more resources could be applied
9 in the R & D area.

10 I think it starts with a sense that
11 natural gas has a growing place in the market
12 place, and the LNG opportunities that I am sure
13 you are very well aware of offer, I think, an
14 opportunity for an overlay if you will within
15 certain ports or even in regions for an even
16 higher LNG fraction and penetration.

17 Working to establish some specification
18 policy -- we've as you know testified to the
19 Public Utilities Commission on the LNG
20 specification issue, so any work and support that
21 we can garner there would be very useful and get
22 back working in partnership.

23 So, I think there is certainly an
24 important dialogue that we would want to continue
25 on this because we continue to learn about the

1 value of keeping the existing infrastructure but
2 building sensibly so you don't strand stations
3 without sufficient demand, and that you build that
4 out accordingly. I think that we are ready,
5 particularly with LNG to the next big increment.

6 Now that we have gotten a recent
7 Appellant Court reaffirmation of our fleet rules,
8 that we consider to be an important bedrock. We
9 are very pleased to the Air Resources Board acting
10 aggressively and very cooperatively on the fleet
11 rules for our basin. It may end up that other
12 regions want to vest into that, either opt in
13 formally or take steps to encourage it.

14 I think that, yeah, there are many types
15 of roles that you could play.

16 PRESIDING MEMBER GEESMAN: Yeah, on the
17 light duty sector, there is a statement in the
18 report that with some of the environmental
19 improvements expected from diesel fuel that the
20 benefit for light duty vehicles fuel by natural
21 gas compared to diesel light duty vehicles is
22 likely to shrink in the future. Do you share that
23 generalization or how do you reconcile that with
24 some of your comments about toxicity?

25 MR. WUEBBEN: Yeah, and I think that is

1 probably where the crucial issues really
2 intersect. We start with knowing that in 2007 we
3 are going to have a .2 natural gas engine and very
4 unlikely to have a .2 NOX diesel engine. So,
5 there is that head start.

6 The other thing we know intrinsic to the
7 diesel cycle is that it becomes very tough to meet
8 a .01 particulate and a .2 without making some
9 very significant changes to both the emission
10 control system, either using UREA or SCR type
11 systems or absorber systems or what have you.

12 Building that technology I think will
13 take place, and so we do expect there to be a
14 direct competition, but we think that there is
15 likely to be some questions or some uncertainty
16 about the durability and the cost structure of
17 those new diesel engines. In fact, the
18 marketplace has already voting with their feet
19 with that concern about the higher operating cost
20 of that later diesel technology because if you
21 look on the last year and a half, there's been a
22 substantial increase in "pre-buys" of diesel
23 engines. In fact, it is exceeding the pre-buy
24 experience that occurred in 2000 and 2001. There
25 is a recent article about that front page on the

1 Wall Street Journal as a matter of fact.

2 Yes, there are risks for a user for
3 using that more complicated technology. That is
4 not to cast an aspersion that the technology won't
5 work and it won't be robust, but I just think as
6 we sit here today that there is a technology with
7 natural gas that can meet it without the degree of
8 trade offs if you will, operational trade offs.

9 There are infrastructure questions
10 obviously about natural gas to continue as you go
11 forward, so that is a balancing. We are very
12 pleased as diesel comes to meet that point to
13 standard and meet it in use, that will be a great
14 achievement.

15 I guess the last thing that tempers any
16 optimism about diesel is a constant awareness
17 really that there is a consent to create the
18 experience that we are all aware of because of the
19 difficulties of meeting some of this emission
20 standards of diesel engines were built essentially
21 with defeat devices, and that is on the record.
22 So, I don't expect that to happen again, but this
23 concern about durability of that low NOX number
24 because it is so low. It is, as you know, a 90
25 percent control from where we are at 2.5, and that

1 is just several years before back in '98, we were
2 at 5 and 4 grams.

3 There has been a lot of progress brought
4 on very quick, and when you make that kind of
5 quick transition, are there risks in that, so we
6 think that it is sensible to certainly maximize
7 your options for fleets.

8 No one knows what the diesel price is
9 going to be. Diesel historically is going up much
10 higher than we would have expected, even from my
11 sense it just got more volatility than gasoline
12 prices and hearing at least the concerns of
13 truckers.

14 I hope that is somewhat of an answer for
15 you.

16 PRESIDING MEMBER GEESMAN: Last question
17 relates to ethanol permeation. Do you know is
18 there empirical data available measuring impacts
19 last summer in your district or elsewhere that
20 might be useful in better informing these
21 decisions?

22 MR. WUEBBEN: We were very cognoscente
23 of trying to track that. I think what surprised
24 us about last summer contrasted with the summer
25 before which was the worst in six years, in fact,

1 the first ozone alert violation level in that six
2 year period.

3 Last year it was relatively more of a
4 benign year. We had much greater cooling trends,
5 so the meteorology we believe may have very well
6 masked some of those effects, so we are trying to
7 look more carefully this year. We are hoping and
8 expecting actually there will be more of a typical
9 meteorological regime compared to last year.

10 Certainly the ozone levels that achieved
11 last year were far lower than the year before. It
12 is very difficult to test these air quality
13 particular ozone on an annual year-to-year basis.
14 What we've done, and I can bring the data or make
15 it available in our submittal, our written
16 comments, but we have actually looked at three-
17 year running averages.

18 What you find out if you take the three
19 year running average over the last 15 years, it
20 has come down, but actually even in the last four
21 or five years, we have kind of plateaued. While
22 we are continuing now with the introduction of
23 cleaner vehicle fleet in general, that ozone
24 becomes more difficult to suppress once you get
25 down to those relatively low levels.

1 Plus the eight-hour ozone standard is
2 intrinsically more difficult to obtain than the
3 one hour standard, so I think we are struggling
4 with how do we get this next increment,
5 particularly in light of the fact that we are even
6 more reliant on what we call "black box control
7 measures" that we are not really sure where we are
8 going to get them from, but we know that we need
9 them, and that is just for the ozone one hour.
10 There is likely to be a similar and in fact
11 broader set for the eight-hour compliance.

12 It is an open question if you will, but
13 we are going to track it carefully and be happy to
14 share that as we get the data.

15 PRESIDING MEMBER GEESMAN: Thanks for
16 being here, Paul.

17 MR. FONG: The doctors tell me we have
18 suffered the ultimate technology failure, the
19 light bulb has gone out here, so we are going to
20 carry on. I believe the TV monitor is working,
21 and I think your --

22 PRESIDING MEMBER GEESMAN: Yeah, two of
23 three of them are.

24 MR. FONG: We will continue with our
25 limited capacity here. I think the representative

1 from Bosch is prepared to make a presentation on
2 his light duty diesel perspective.

3 MR. SUTER: I apologize to those on the
4 near side of the room here who may not be able to
5 see the television on the other side. I only have
6 six slides, so I don't figure you are going to
7 miss that much. I will try to describe them as
8 that may be helpful.

9 Good afternoon, my name is Warren Suter.
10 I am the Director of Diesel Marketing for Robert
11 Bosch Corporation in Farmington Hills, Michigan.

12 Robert Bosch is a supplier of diesel
13 fuel injection equipment to the automotive
14 industry. Let me begin by thanking you for the
15 opportunity to discuss clean diesel technology and
16 how it could play a role in helping California
17 meet its goals in the area of reducing petroleum
18 fuel use.

19 My comments today are focused on the
20 potential impact of light duty vehicles generally
21 passenger cars and light duty trucks and are
22 predicated on those vehicles meeting Tier 2 Bin 5
23 or California LEV 2 emission standards.

24 Near mid term vehicle energy sources and
25 diesel's benefits with respect to consumption,

1 performance are the topics that I would like to
2 speak with you today about.

3 Power train and energy options in the
4 United States get more robust with time. Looking
5 forward 50 years from today, the options are hard
6 to see clearly. Hydrogen, ethanol, bio-fuels,
7 other possibilities hold great promise of drastic
8 reduction in petroleum use.

9 Vehicle emissions and greenhouse gasses,
10 however, those solutions are not yet technically
11 robust and the landscape that far down the road is
12 still fuzzy. In the 20 to 50 year time frame, the
13 number of viable technology options narrows.

14 There may be the beginning of a fuel
15 cell vehicle for the mass market, and gas and
16 diesel and electric hybrids will probably have
17 made an impact on the market. What must be
18 considered in this context are cost, technology,
19 fueling infrastructure, and ultimately consumer
20 acceptance before wholesale changes can be
21 predicted.

22 Within the next 20 years, the technology
23 options shrink still further to the internal
24 combustion engine fueled by either gasoline or
25 ultra low sulphur diesel.

1 While hybrids are a viable option,
2 hybrid technology can be viewed as just another
3 measure to improve the efficiency of hybrids
4 primary propulsion source, the internal combustion
5 engine, or ICE.

6 Currently, traditional gasoline and
7 diesel ICE dominate the world passenger vehicle
8 market with more than 96 percent market share. It
9 is predicted by the diesel industry that this
10 market share will decrease by only 12 percent over
11 the next 20 years.

12 In other words, internal combustion
13 engines will be the dominant power source for all
14 passenger and light vehicles around the globe
15 until about 2025.

16 This chart illustrates the near to mid
17 term passenger car and light duty market picture
18 in Western Europe and the United States.

19 In Europe, the diesel market share which
20 represents about half the market today should
21 remain stable while newer alternatives will
22 probably erode the gasoline ICE share.

23 In the US, diesel could grow to 20
24 percent or more by 2025 mirroring the
25 dieselization of Europe over the last eight to ten

1 years.

2 At this year's SAE World Congress in
3 Detroit in April, Margo Oge, Director of EPA's
4 Office of Transportation and Air Quality said if
5 diesel engines, gasoline, and electric hybrids and
6 advanced gasoline engines came to dominate the
7 national fleet by 2030, it could save \$100 billion
8 dollars annually in oil imports. We could reduce
9 our oil consumption by three million barrels a
10 day.

11 To illustrate how modern clean diesel
12 could contribute to such a dramatic impact, let me
13 begin with a few words on the environmental
14 aspects of clean diesel.

15 The automotive community has made great
16 strides in developing cleaner diesel engines.
17 Compared to ten years ago, diesel engines emit
18 significantly fewer particulates, oxides of
19 nitrogen, and unburnt hydro carbons, and carbon
20 monoxide.

21 This graphic illustrates the reduction
22 in allowable passenger car emissions in Europe
23 from 1990 to today. Further reductions are
24 expected and the US Bin 5 standard is shown on the
25 right for comparison.

1 Some of the technology involved in
2 contemporary diesel engines includes variable
3 geometry turbo charging, dual clutch, automatic
4 manual transmission, advanced electronic controls,
5 sensors, and injectors, and high pressure direct
6 fuel injection.

7 Meanwhile, the European community has
8 experienced significant changes in its automotive
9 market in little more than five years. In 1997,
10 gasoline passenger vehicles dominated with 80
11 percent of the market. That same year, common
12 rail diesel technology was introduced. This
13 fundamentally improved diesel's performance,
14 emissions, and fuel economy.

15 The European union governments and
16 industry formulated joint policies that encourage
17 fuel conservation, improved the environmental
18 picture, and promoted advanced technology all
19 without sacrificing performance or requiring
20 significant new infrastructure investments.

21 Consumers quickly recognized the
22 advantages of clean diesel. By 2000, diesels had
23 claimed nearly 30 percent of the European
24 passenger car market. Today, diesels account for
25 48.4 percent of new passenger car sales in Western

1 Europe. Diesel penetration is strong across all
2 car segments.

3 On average, diesel vehicle owners spend
4 less money on fuel due to the inherent fuel
5 economy of the clean diesel power train. The
6 German Association of the Automotive Industry, the
7 VDA, estimates that the average fuel economy of
8 German-built automobiles has risen from 30 miles
9 per gallon to 34.4 miles per gallon during this
10 period of diesel growth from 1997 to 2003.

11 Diesel's fuel efficiency also directly
12 translates to lower emissions of carbon dioxide,
13 the potential reduction of CO 2 through adoption
14 of the diesel in passenger cars is noteworthy.

15 Of the five largest countries in Western
16 Europe, diesel is accounted for 44 percent of new
17 car sales in 2004 in Germany, 33 percent in the
18 UK, 60 percent in Italy, and more than 70 percent
19 in Austria, Belgium, and France.

20 To summarize, a decade of diesel
21 development and growth has helped achieved
22 significant reductions in fuel consumption in
23 Europe while significantly reducing emissions.
24 Ultimately, this trend could also contribute to
25 the reduction in California's use of petroleum.

1 So much for the European market trends.
2 What about diesel's acceptance in the US? Diesel
3 sales increased by 56 percent from 2000 to 2004 in
4 the US accounting for almost 3.5 percent of new
5 passenger car and light duty truck sales, with
6 most of that growth in trucks.

7 Despite the advantages, there remain
8 questions as to whether diesel vehicles can be
9 effectively marketed in the US. Detractors say
10 that consumers cannot forget the diesel's ill
11 fated attempt at the US market in the 1980's or
12 their negative opinion is based on smokey semi-
13 trucks or the odd city bus.

14 Survey data belay the stereo-type. A
15 recent study by JD Power and Associates showed
16 that roughly two-thirds of Americans would
17 consider a clean diesel if given the option.
18 Moreover, industry insiders and neutral observers
19 foretell of a clean diesel surge in the US once
20 the EPA's ultra-low sulphur diesel fuel becomes
21 available nation wide in 2006, which will enable
22 the more advanced diesel technology to meet
23 stricter air quality standards.

24 Quoting Volker Steinwascher, Head of
25 Volkswagen of North America, Automotive News in

1 January of this year said North America is warming
2 to diesel technology according to a leading
3 automotive industry figure in the US, and they
4 quote, "We are very bullish on technology and feel
5 strongly that by the time Tier 2 Bin 5 standards
6 come in 2007, we will be ready." Mr. Steinwascher
7 says the combination of power, clean fuel and
8 economy is an attractive one to many Americans.

9 In the interest of time, I would invite
10 you to read the additional quotations which we put
11 in the letter which we sent to the docket on the
12 12th of May.

13 In 2003, the Diesel Technology Forum
14 conducted a public opinion survey about diesel
15 that included a sample of policy makers,
16 regulatory officials, and members of the media, a
17 group identified on this slide as "influencers".

18 The survey found that some 30 percent of
19 the general public already believes diesel has
20 become better in terms of the environment while
21 only 12 percent think it has gotten worse. This
22 sentiment is even stronger with influencers who
23 have more exposure to current emission regulation
24 information.

25 Only 2 percent of influencers think

1 diesel has gotten worse while 71 percent think
2 diesel has made improvements. A study conducted
3 by the US EPA and published by the Society of
4 Automotive Engineers in March last year on
5 progress in the development of diesel vehicles for
6 Tier 2 light duty emissions documented the
7 progress made to date. Quoting the report, "PM
8 emissions for all of the advanced proto-type
9 vehicles were well below Tier 2 Bin 5 levels. The
10 most recently tested vehicle demonstrated
11 intermediated useful life, that is 50,000 mile
12 particulate matter, NOX, and hydro-carbon
13 emissions at or below Tier 2 Bin 5 levels.

14 In our view, modern clean diesel
15 vehicles are already making gains in the US market
16 and potential exists for significant growth in
17 market share over the next 20 years. As auto
18 makers make more diesel models available,
19 consumers will respond positively.

20 In support of that view, we have
21 provided by way of illustration comparisons
22 between two diesel vehicles currently for sale in
23 the US and their gasoline counterparts. This are
24 the Daimler Benz E320 and the Jeep Liberty model.

25 In both cases, increased power,

1 decreased CO2 emissions, and improved fuel economy
2 give clean diesel power a clear advantage.
3 Further, we have provided an estimate of fuel
4 consumption reduction which could be expected if
5 light duty vehicle market share were to grow to 40
6 percent over an eight year period.

7 Average fleet fuel economy would rise 17
8 percent, and oil consumption would decrease by 110
9 million barrels annually. Greenhouse gas
10 emissions would likewise decrease. Although
11 diesel is not at 40 percent market share in the US
12 today, the potential is not out of reach since it
13 mirrors the major shift in Europe over a similar
14 period of time.

15 A study by the Oakridge National
16 Laboratory for the Department of Energy in 2004
17 estimated the market potential of light duty
18 diesel vehicles in 2012 to be 31 to 38 percent.

19 In conclusion, we believe there are many
20 reasons why clean diesel must be considered as one
21 of several paths to reducing California's use of
22 petroleum.

23 Clean diesel is ready today. Fuel
24 economy improvements are documented in the real
25 world, operating costs are lower, emission levels

1 are in check, and will be reduced as ultra low
2 sulphur diesel becomes available in 2006 as it is
3 in Europe today.

4 The diesel fuel infrastructure exists.
5 Diesel is available at 42 percent of retail
6 gasoline locations. Consumers want these
7 vehicles. At least 13 diesel vehicles are
8 currently available to consumers in the United
9 States this year.

10 There are many conflicting state,
11 federal, and even global regulations impacting
12 clean diesel, regardless of what energy source
13 powers our vehicles, there must be continued
14 dialogue between and within industry and policy
15 makers.

16 We are not competitors. In fact, we
17 have common goals. Collaboration can bring
18 technological advance to the market faster than
19 conflict and increase consumer choice can make a
20 difference.

21 Thank you for your time and attention.

22 PRESIDING MEMBER GEESMAN: I was
23 curious. You don't show market penetrations over
24 the next fifteen years as really comparable or
25 achieving the levels that much of the EU, I wonder

1 why that is the case?

2 MR. SUTER: I think the markets are not
3 exactly the same. There are incentives in Europe
4 to driving a diesel vehicle. There are
5 differences in fuel price compared to the United
6 States, difference in driving habits, and there
7 are tax incentives in some European countries to
8 drive a diesel vehicle.

9 We are not expecting that all those
10 incentives would appear in the United States. They
11 certainly could, and that would have been a big
12 impact on the penetration rights.

13 PRESIDING MEMBER GEESMAN: You also see
14 a higher penetration in Europe of both natural gas
15 vehicles and hybrids than in this country. I
16 wonder if you would reflect upon that?

17 MR. SUTER: Having lived the last 6 1/2
18 years in Europe and recently returning, I would
19 say that it is my experience that the motivation
20 of the driving public is somewhat different, and
21 that is part of our modeling that we've shown
22 here. There are also differences in the way
23 vehicle manufacturers market vehicles in Europe
24 compared to the United States and compared to the
25 Far East. I think that makes a big difference.

1 What vehicle is made available determines what
2 people will choose.

3 PRESIDING MEMBER GEESMAN: Thank you
4 very much.

5 MR. SUTER: You're welcome.

6 MR. SMITH: I have two questions. Can
7 you comment on the concerns that Mr. Wuebben
8 raised a few minutes ago regarding the cost and
9 durability of the new diesels?

10 MR. SUTER: Yes, I'd be happy to. I
11 think that the notion that this technology is new
12 and has come on the marketplace over night may be
13 simply a North American focus. These vehicles
14 have been in the marketplace in Europe since well
15 before 1997 when we introduced common rail. The
16 evolution of diesel began with the first passenger
17 car diesels in 1937, and there has been a
18 continuous development and growth in the passenger
19 car market in Europe over that time.

20 The newest technologies, I referred to
21 common rail technology, there are always unit
22 injectors which are preferred by some of our
23 customers. Both of these technologies are very
24 robust. The manufacturing base is now world wide,
25 and the car manufacturers rely on them for the

1 same reliability expectations that their customers
2 have world wide.

3 MR. SMITH: Do your comments apply also
4 to some of the after treatment or the emission
5 treatment technology Mr. Wuebben was referring to,
6 SCR, UREA, etc.?

7 MR. SUTER: They do not. As I said, we
8 are predicating our predictions about market
9 penetration and success in North America and
10 potential for light duty diesel on the fact that
11 manufacturers are working on emission technologies
12 to meet Tier 2 Bin 5 and to meet further
13 reductions in European standards.

14 Our job as fuel injection supplier is to
15 give an engine out of emission which is then
16 compatible with the manufacturers after treatment
17 strategy, and that is what we deliver, and we
18 deliver that over the vehicle lifetime.

19 MR. SMITH: My last question deals with
20 the California Air Resources Board's designation
21 of diesel as a toxic air contaminate. Does the
22 introduction of the new low sulphur and
23 introduction of the new advanced diesel technology
24 have any bearing on the basis on which the Air
25 Resources Board made that determination. Do you

1 know if that would have any affect one way or the
2 other on that?

3 MR. SUTER: I can only say, again, the
4 after treatment necessary to reach a Tier 2 Bin 5
5 level or Euro 4 or Euro 5 level are under
6 development. As I mentioned in my presentation,
7 great progress is being made and manufacturers
8 appear confident that they can reach Tier 2 Bin 5
9 by 2007.

10 How they are achieving that is not part
11 of my presentation and how the Air Resources Board
12 comes to the conclusion that particulate levels
13 which are comparable are on one side toxic and on
14 the other side not toxic are not known to me.

15 MR. FONG: We're getting a consult here.

16 PRESIDING MEMBER GEESMAN: Dan, maybe we
17 should go to somebody else that doesn't have
18 visual aids.

19 MR. FONG: Okay.

20 PRESIDING MEMBER GEESMAN: I can go to
21 blue cards.

22 MR. FONG: Yeah, why don't you do one of
23 the blue cards.

24 PRESIDING MEMBER GEESMAN: Robert
25 Walker, Imperial Valley Fuels.

1 MR. FONG: He had a visual presentation.

2 PRESIDING MEMBER GEESMAN: Okay, Allen
3 Dusault, Sustainable Conservation.

4 MR. DUSAULT: I know everyone must be
5 getting tired, I am, and I'll try and keep my
6 remarks pretty brief. Let me just say, my
7 organization, Sustainable Conservation, is a non-
8 profit environmental group. We are based in San
9 Francisco, and we work collaboratively with our
10 different stakeholders. We have a model of
11 environmentalism that works with industry and
12 works a lot with agriculture as well.

13 My remarks are focused on really bio-
14 fuel aspect of the report. That is how do we
15 promote, how do we adopt, bio-diesel, bio-ethanol,
16 and one forgotten fuel and not well used fuel is
17 bio-methane, which is something we've been working
18 on as well.

19 I have really three areas of focus. The
20 first area deals with how do we grow our own
21 renewable fuels. Right now we import most of our
22 bio-ethanol and diesel to the extent we use it
23 from the Midwest, and I think that is an important
24 issue.

25 Also another issue is the environmental

1 community is divided on the issue on some of the
2 bio-fuels, bio-diesel and ethanol. I think that
3 is having an impact on how quickly we can move
4 forward to address or move toward petroleum
5 reduction.

6 My last comments focus on how do we come
7 up with solutions. How do we actually devise
8 solutions or actually adopting more in the way of
9 bio-fuel use?

10 Right now we are exporting jobs, money,
11 and control over our destiny by relying on fuel
12 produced somewhere else. That doesn't have to be
13 the case. California has several competitive
14 advantages when it comes to growing our own bio-
15 fuels. They include a longer growing season,
16 closer proximity to end markets, that is our own
17 transportation system, climate that allows a
18 broader range of crops broader than anywhere in
19 the US, and we also have the ability to double
20 crop, that is to grow two crops in the same piece
21 of ground in any given year. That means higher
22 farm revenues as a result.

23 We have some advantages, so we can grow
24 fuel crops here, and we can do it using
25 sustainable without using much in the way of

1 pesticides, fertilizers, and with reduced water
2 and energy inputs. I am speaking from experience.
3 We've been actually growing some bio-fuel crops
4 and doing it with a lot less inputs and our yields
5 are equal to our greater than conventionally grown
6 fuels.

7 I think that is an important point. Not
8 only can we improve our energy security in our
9 environment by encouraging growing our own bio-
10 fuel crops, we can create an economic argument for
11 petroleum reduction and a constituency for
12 producing it. Right now we don't have that. We
13 don't have farmers growing bio-fuels.

14 When we have that constituency, there is
15 a convergence of interest that can accelerate
16 conversion to renewable fuels resulting in faster
17 movement away from petroleum consumption. This is
18 now happening in the Midwest. In Minnesota, for
19 example, they currently have like 10 percent
20 ethanol blend, and they are going to be moving to
21 a 20 percent I believe in the not too distant
22 future. These things that can be done where you
23 have the constituency.

24 Let me quickly talk about the impact,
25 the environmental impacts and focusing on low

1 blends. That is an issue that has come up today.
2 Low blends introduces what I believe to be the
3 major barrier to petroleum reduction. Namely, the
4 perceived environmental impacts, particularly on
5 air quality.

6 Most of this objection resides within
7 California's environmental and regulatory
8 communities. Ethanol is the perhaps the most
9 contentious fuel, but it is also the most quickly
10 deliver us away from petroleum dependence.

11 Ethanol's impact unless it is different
12 assessments from different air quality experts,
13 the federal EPA believes that ethanol has a
14 positive net benefit, public health benefit, while
15 CARB believes the opposite.

16 The imperfections of the predictive
17 model and other models make for an interesting and
18 difficult to follow debate among experts. What is
19 clear is that we need to continually revisit the
20 assumptions about the predictive model to
21 determine its validity, and some of that is
22 happening now.

23 There is a belief by some that CARB has
24 an inherent conflict of interest. The agency has
25 legally bound itself to a position of opposing

1 ethanol as an oxygen aid, at least as a mandate in
2 California gasoline. In order to have a tenable
3 legal position for the waiver request, CARB has
4 had to prove not only that non-oxygenated fuels
5 are good, but that ethanol is bad for the
6 environment, whether justified or not.

7 It is beyond the purview of my
8 discussion to go into those details, but I think
9 it is important to say that the environmental
10 community has really -- part of it is basically
11 accepted EPA's position, and part of it has
12 accepted CARB. To address those concerns and
13 instill confidence in the process, it is my
14 recommendation that an independent assessment of
15 the assumptions of the predictive model be
16 performed, and a proposal has actually been made
17 to that affect.

18 A funding source is the primary
19 obstacle, but I think that can be resolved. It
20 would be useful to have the support of CEC and
21 maybe pursuing that study.

22 There are two other brief points --

23 PRESIDING MEMBER GEESMAN: Let me
24 interrupt you there and ask that you provide us
25 with a description of the proposal and as much

1 detail as you can in writing so that we can better
2 assess it.

3 MR. DUSAULT: Sure. Two other brief
4 points on environmental impacts as barriers to
5 adoption of bio-fuels. First, California has
6 constrained its fuel options by creating a sudden
7 death threshold for air emissions that is
8 prejudice to existing petroleum fuels and
9 discounts new fuels.

10 Bio-diesel is a good example. Existing
11 regulatory structure evolved around the chemical
12 qualities of diesel fuel and cost (indiscernible)
13 to modifying its formulations. When a new fuel
14 like vegetable-based bio-diesel and its blends
15 comes along, it is total air quality impact or
16 other benefits is not relevant to meet regulatory
17 process.

18 Instead, any emission that breaches the
19 standard is a disqualifier. As such, where we can
20 achieve 40, 60, and 80 percent reduction in
21 particulate matter, carbon monoxide,
22 (indiscernible) organic compounds, or other
23 constituents while there is a 5 to 10 percent
24 increase in NOX, that is a deal killer.

25 By implication, where a bio-fuel could

1 provide 200 units of air quality benefit and we
2 can do that with a risk assessment or how we would
3 standardize that, so a 200 unit air quality
4 benefit, and a ten unit liability, that fuel is
5 effectively barred from use, even though the
6 public health would incur a total overall benefit.

7 That result discourages environmentally
8 preferred fuels and delays reducing petroleum
9 dependence. Having a more flexible regulatory
10 structure would accelerate adoption of alternative
11 fuels.

12 A final comment on environmental impacts
13 of bio-fuels relates to where we measure the
14 emissions. The debate within the environmental
15 community and within the regulatory agencies has
16 focused on tail pipe for vehicle emissions. As
17 such, when a petroleum fuel is compared to a
18 renewable fuel, it is done so without looking at
19 its life cycle impact. For example, we find Asian
20 oil production facilities have been found to be
21 significant sources of NOX, VOCs, etc.

22 How do these compare with emissions from
23 a distillation plant, and which would you rather
24 live next to, an oil refinery or a Jack Daniels
25 plant? That issue has been mostly absent from

1 discussion, but it is an important issue because
2 lungs don't differentiate source of emissions.
3 The combined life cycle impact, air quality
4 impacts of petroleum consumption are relevant.

5 Even if the predictive model perfectly
6 reflects real world conditions and there is a net
7 increase in both evaporative emissions and NOX,
8 ethanol may still be preferable. Carbon's other
9 state agencies should consider factoring these
10 questions into how we value alternative fuels. If
11 we obtain more of our petroleum fuel from sources
12 outside California in the future, we should factor
13 in the air quality impacts of the refineries on
14 the local communities. Exporting air pollution is
15 not environmentalism.

16 My recommendations in closing here for
17 accelerating petroleum displacement concerns how
18 we move beyond where we are now. The status quo
19 has tremendous momentum and its many defenders,
20 some of them inside the environmental community.
21 They have pretty much held sway over the debate.

22 Here are four specific recommendations.
23 California needs to create a climate for
24 investment in alternative fuels, specifically bio-
25 fuels. The climate does not now exist. Many

1 investors are waiting for signals from the state
2 that would justify the huge investments that are
3 required.

4 Adopting renewable fuel standards, for
5 example, for bio-fuels that over time
6 progressively increases blends and gasoline diesel
7 and even CMG using bio-methane would likely do
8 more to reduce petroleum dependence than any other
9 single action that you could take, with the
10 possible exception of banning the Oxygen 8 waiver
11 request.

12 California should consider adopting an
13 air pollution standard for greenhouse gas
14 emissions from fuel. California was the first
15 state to recognize greenhouse gasses as an air
16 pollutant and the first to regulate emissions from
17 vehicles.

18 Incorporating such a greenhouse gas
19 emission standard and the predictive model
20 equivalent for fuel blends would provide a much
21 needed incentive to reduce petroleum use.

22 California farmers must be treated as
23 partners and actively engage in devising solutions
24 for petroleum dependence. For this to happen
25 research dollars are critical and a farm

1 constituency must be created.

2 Currently there are less than a handful
3 of people in California trying to grow bio-fuel
4 crops, and they have less funding that it takes to
5 buy a garbage truck. That is an embarrassment.
6 There is no lack of ways to fund this needed
7 research, there is a lack of will.

8 CEC should assist the environmental --
9 my final point, CEC should assist the
10 environmental community in developing a system to
11 evaluate environmental trade offs between
12 competing fuel options. Currently those
13 evaluations are implicit and different between
14 individuals and organizations.

15 CEC is in a position to arbitrate an
16 initiative and provide direction in formulating
17 methods of valuing the comparative environmental
18 trade offs of the different blends, for example,
19 bio-diesel versus diesel that (indiscernible)
20 among environmentalists, regulators, and the
21 public. Actions sooner rather than later is
22 needed.

23 In making this final point, one thing
24 that has happened in California is we have been
25 looking for the perfect fuel. Now, we've looked

1 at methanol, hydrogen, electricity, cellulosic
2 ethanol is the latest buzz word, but it is
3 important to recognize there is no perfect fuel.
4 Each one has environmental economic and public
5 health trade offs. As long as we are looking for
6 the perfect fuel, we are not going to abandon the
7 most imperfect fuel of all, that is petroleum.

8 Trade offs happen whether we recognize
9 it or not. It is the total impact that is
10 important, not just the most visible sources of
11 pollution. If we start with that premise, we may
12 make very different choices than we are currently
13 doing now. Thank you very much.

14 PRESIDING MEMBER GEESMAN: Have you
15 filed your written statement with the docket?

16 MR. DUSAULT: I haven't yet, I can do
17 that.

18 PRESIDING MEMBER GEESMAN: Great.

19 MR. DUSAULT: Thank you.

20 PRESIDING MEMBER GEESMAN: Thank you.

21 MR. FONG: I'd like to go to Mike Eaves
22 if you are ready, Mike. We have a partial audio
23 visual system, but yes, why don't you do it from
24 up here.

25 MR. EAVES: Good afternoon, my name is

1 Mike Eaves, I am with the California Natural Gas
2 Vehicle Coalition. I've been looking through the
3 options report, looking at that for the last
4 several weeks and everything with anticipation
5 because I wanted to see where we were, where we
6 are now versus where we were a couple of years
7 ago.

8 I got word that it was posted yesterday
9 afternoon, so these comments are things that I put
10 together after trying to look at that options
11 report.

12 We have been actively involved for two
13 and a half years working with the Energy
14 Commission and staff on the alternative fuel
15 scenarios, and we appreciate all the work that Dan
16 and Ken and the whole group have done on that.

17 When I look at the options report last
18 night, there is a radical change that has taken
19 place in two years. Two years ago we had a
20 petroleum demand curve that was going out of
21 sight, and we kind of exercised in the model all
22 the efficiency gains we could come up with in fuel
23 economy, CAFE credits, and everything, and it
24 still left a wide gap and the need for alternative
25 fuels.

1 That is why we have been engaged, all
2 the stakeholders have been engaged with the Energy
3 Commission looking at the issues of the where
4 alternative fuels fit in in closing that gap.

5 One of the things that you see in the
6 report, and I had to go back to look at the 2003
7 report. In 2003, the demand curve unconstrained
8 out in 2025 was in the 26 to 27 billion gallons a
9 year, and the 2005 report that we've just been
10 reviewing today, that projection is 2025 is 20
11 billion gallons. So, we've lost 6 to 7 billion
12 gallons without doing anything.

13 The only thing that is different is the
14 price scenario that we have picked. If that price
15 scenario is correct, given the prices that we've
16 been at this year, we should see about 20 percent
17 reduction in petroleum demand by the end of this
18 year, and I don't think that is necessarily going
19 to be true.

20 2005 includes a modest -- it includes an
21 implementation of the greenhouse gas regulations,
22 and that provides the 30 percent improvement in
23 CAFE, not the 100 percent we were looking at in
24 CAFE two years ago.

25 Also hydrogen penetration which was

1 counted on to close that gap two years ago is
2 moved out into the future beyond the time frame of
3 this report.

4 We still have VMTs up, 47 to 48 percent.
5 Your vehicle population is going to up 40 percent.
6 The 10 percent ethanol option in gasoline is still
7 there as it was a couple of years ago. The gas to
8 liquid scenario is down to 20 percent scenario
9 versus the 30 percent it was a couple of years
10 ago.

11 The only thing that is different is we
12 have the high price scenario that says that is
13 going to constrain demand, but the VMTs say that
14 is not so. Anyway, there is little or not
15 continuity or linkage to the 2003 report.

16 Obviously hybrids have a greater
17 presence. Hybrids were in there in 2003, but we
18 are not talking about the magnitude of hybrid
19 penetrations we are now. Plug-in hybrids are in
20 there gaining credibility in this report even
21 though the OEMs say they are not interested.
22 There is a fundamental issue in looking at plug-in
23 hybrids.

24 We talked a little bit about it this
25 morning and said you have the mild hybrid, the 15

1 percent of maximum power provided by the
2 batteries. You have the 40 percent maximum power
3 by the powers was less economical, and the problem
4 with manufacturers looking at the functionality of
5 a plug-in hybrid with 20 to 60 mile electric
6 capability is you have to have 100 percent peak
7 power from the batteries, and that really drives
8 up the cost.

9 Also there is talk about improving the
10 fuel economy for medium and heavy duty diesel,
11 even though it is going to take some time to cover
12 the efficiency losses that they will be
13 experiencing and complying with 2010.

14 Given the lower projections for demand,
15 the alt fuel scenarios for light duty, propane,
16 natural gas, E 85, whatever you want to look at,
17 those kinds are marginalized. In other words, it
18 looks like we are going to get everything from
19 something else.

20 You look at the solutions and you say,
21 okay, you've got gas to liquids for maybe light
22 duty diesel, gas to liquid for diesel blends, bio-
23 diesel potentially is blends. You've got gasoline
24 hybrids and the efficiency gains that they have,
25 increased fuel economy for gasoline vehicles,

1 ethanol blends for gasoline. In short, there is
2 really diversification beyond gasoline and diesel.
3 That is a far cry from the options in AB 2076
4 report where we said we've got to make all these
5 efficiency gains and we've got to go out for
6 alternate fuels.

7 Again, the question we ought to be
8 asking ourselves is what happened to the 6 or 7
9 billion gallons a year that we've reduced in our
10 projections. Is that real, or is that not real?

11 Here are some realities from an
12 alternate fuel provider. There is little or no
13 interest in oil companies using gas to liquids or
14 ethanol extenders if the production of those fuels
15 is not owned by the oil companies. There is no
16 move really to capitalize -- for those oil
17 companies to capitalize to displace their own
18 products. The petroleum companies would be glad
19 if they could eliminate the oxygenate requirement.

20 I think most oil companies are in a
21 position to sit there and look at buying a
22 position in a market versus helping to develop it.

23 The biggest impediment to alternative
24 fuels is the oil companies exercises tremendous
25 market power by doing nothing in terms of fuel

1 diversity and bringing on alternatives.

2 Oil companies don't want to create
3 competition for their own products at their own
4 station. The natural gas vehicle industry learned
5 that years ago. All of our major business model
6 opportunities were with oil companies, and that
7 was dismissed in the middle 90's.

8 Alternative fuel providers have to be
9 forced to begin to looking at independently
10 developing their infrastructure without government
11 policy to promote the diversification.

12 The natural gas industry has had to
13 develop a business model that is totally
14 independent of petroleum companies as we look
15 forward to trying to figure out how we can
16 survive.

17 If we go from an alternative fuel
18 perspective, let's take a look at the product
19 side. The automobile manufacturers, they want to
20 produce gasoline vehicles. You know, General
21 Motors has been in the news recently, and they've
22 got 60 different models in their vehicle line up,
23 and they have one natural gas version of one
24 model, and it is not even one of the most popular.

25 Gordon Chrysler, as I've mentioned

1 before, they produce no natural gas vehicles in
2 the US, but do manufacture NGVs in countries where
3 they have aggressive energy and fuel
4 diversification policies and greenhouse gas
5 initiatives.

6 What we presented in December was we
7 need to codify into state law is that we need to
8 look at petroleum reduction and alternative fuel
9 penetration. The projections right now for
10 petroleum demand and everything seem to diminish
11 the need for alternative fuel penetration and
12 create a sort of marginal market from what was
13 envisioned a couple of years ago.

14 We have been working with the Energy
15 Commission diligently to look at the fuel
16 potential of natural gas and all of the
17 stakeholders have looked at their own projections
18 of what they could deliver, but obviously we have
19 to develop long term state policies. It is going
20 to be hard to develop those long term state
21 policies if we have this questionable 6 to 7
22 billion gallons of fuel that all of the sudden
23 disappeared off the table.

24 We also have to provide adequate
25 incentives for market transformation. It was

1 mentioned this morning that the loss of revenue
2 for alternative fuels would have to come up -- is
3 a big mill stone around alternative fuels. One of
4 the things that we have done in the natural gas
5 arena is right now currently natural gas is
6 currently taxed at about 25 to 30 percent of what
7 it would normally be as a gasoline or diesel fuel,
8 and we look out into the future, and we see that
9 if we were selling the 1 to 2 billion gallons of
10 natural gas in the transportation fuel market, we
11 would be very comfortable with paying our fair
12 share of taxes on that type of volume.

13 PRESIDING MEMBER GEESMAN: You here the
14 challenge, Joe Sparano?

15 MR. SPARANO: I'm still back here.

16 PRESIDING MEMBER GEESMAN: Okay. There
17 is industry volunteering to step up to the tax
18 table.

19 MR. EAVES: I think that is an issue
20 that has been on the table for us a long time, and
21 we envision, we look at the life cycle economics
22 out into the future, and right now we are at 75
23 million gallons of petroleum displaced a year, and
24 we need those tax advantages. If we were a
25 billion gallons, I noticed in your projection for

1 the demand forecast that you had 200 million
2 gallons a year, and that is about one tenth of
3 what we project we could be at 20 or 25. I think
4 our industry would be rather robust and have
5 ability to pay if that happened.

6 Policies, they can change the status
7 quo. We don't have policies, we are thinking
8 about policies. Until we do get policies and give
9 us some marching orders into the future, it is
10 pretty hard to go against our competitors.

11 Those policies don't have to be
12 mandates. It doesn't have to be mandated for
13 natural gas in certain fleets, but it certainly
14 should have encouraging policies to encourage
15 introduction of new products.

16 Societal change does cost money and
17 someone will pay. Who pays and how is the
18 question. You know, we've been working diligently
19 last year with Kehoe to come up with a energy
20 policy bill. We are working with Kehoe again this
21 year on 757. We think that is required, and I
22 think in Ken's report, he talked about how several
23 of the alternative fuel providers said that they
24 needed a Moyer-type fund to energize the alt fuel
25 industry, but this was kind of dismissed as

1 undefined, therefore, unworkable, but there are
2 good examples.

3 Two good examples, one is the renewable
4 portfolio standard where the state identified a
5 need and identified the mechanism of a public
6 purpose surcharge to address that need, and we are
7 talking about nearly a billion dollars, you know,
8 raised and invested to change the status quo, and
9 frankly it is working. We are getting to the
10 point where the governor has made his thoughts
11 known of advancing the goals of that program.

12 PRESIDING MEMBER GEESMAN: We ought to
13 be clear on that bill, Mike, that proposal or that
14 program did not originate from our staff or any
15 other element of the state bureaucracy. In fact,
16 it arose in the last administration, I think,
17 because frustrated environmental advocates,
18 frustrated renewable energy industries reflecting
19 upon the failure of earlier state policy in the
20 electricity market. That is a popular program in
21 state government now, has been for the last couple
22 of years. Everybody is in favor of it, but it
23 sure wasn't our idea.

24 MR. EAVES: What we are looking for is
25 not necessarily -- I don't care who authors it, I

1 think we've got to come up with policies. The
2 Moyer program itself was a major move to address
3 the issue of getting lower emission products to
4 penetrate the market, and we were floundering
5 around for probably five years at the \$20 million
6 level, now all of the sudden, we turned vehicle
7 registration fees and entire disposal fees into a
8 fund that is the magnitude that was originally
9 envisioned.

10 I think we believe that we can work with
11 policy makers, legislators, regulatory agencies to
12 try to come up with that approach and do that
13 rather than saddle each and every alternative fuel
14 venture with its own developmental costs and
15 breaking into the market.

16 I've shown you this before. Now we are
17 at 30,000 vehicles, 5,000 heavy duty vehicles. It
18 is those 5,000 vehicles that are displacing 90
19 percent of the 75 million gallons a year, so I
20 think our projections that we could be at 1 to 2
21 billion gallons in 2025 is fairly realistic.
22 We've got limited products.

23 This is a slide I used before because I
24 said variable or changing policies create risk.
25 No policies create risk. Not having a policy

1 doesn't do anything for any manufacturer to get
2 off the dime and look at things. So, we need,
3 obviously, unified long term policies to expand
4 vehicle engine offerings.

5 I think in the projections that maybe
6 Dan had in his report, he had a Honda scenario and
7 a GM scenario. We are not comfortable with two
8 manufacturers with two products in the market.
9 There could be ten manufacturers with twelve
10 products in the market.

11 You know, Honda, if you take Honda and
12 start with their new home refueling unit and start
13 off at 2,500 units a year into California and grow
14 that, Honda could be a contributor of 100,000 on
15 the road in twenty years, and it will only take
16 several other manufacturers to make that half
17 million/million vehicle penetration. So, good
18 policies aren't there to just keep Honda and GM in
19 the picture. Good policies are in there to get
20 the Chryslers and the Fords and some of the
21 European manufacturers in the US game.

22 California infrastructure has grown.
23 You see a snapshot in the report of 180 reported
24 stations. This is a number that I just got from
25 the utilities yesterday and asking them for their

1 NGV accounts, and these are station accounts where
2 they provide natural gas at the NGV rate to be
3 compressed for fuel. There were 365 stations and
4 40 percent of those are public.

5 As we look in Dan's report that the
6 heavy duty arena has some great opportunity, light
7 duty arena because we are going to be building
8 stations for those heavy duty products, the light
9 duty arena has the potential of being a very good
10 collateral market as more stations are built and
11 more people are aware that those are out there.
12 With good state policies and everything, that
13 could really grow the market in the light duty
14 sector.

15 I guess one of the things that I look at
16 in these series of reports versus the other ones,
17 I don't see the continuity, I don't see what has
18 been added, deleted, or changed and why, and I
19 still think a real serious question is what
20 happened to that 6 or 7 billion gallons a year
21 that we were projecting before because that is the
22 deal killer.

23 You take that out, and we can start to
24 live with thinking about energy efficiency and
25 some of the blend options. If that loss that may

1 be a paper loss, if that is not really there, if
2 we are really going to see demand of 6 to 7
3 billion gallons, then we better look at our
4 alternative fuel strategy quite a bit more.

5 I think we've all got to be more
6 creative in coming up with developing policy
7 recommendations that we can advance to the
8 governor, to the legislature, to whoever it has to
9 be to change the status quo. I don't think, you
10 know, there are certainly a lot of -- given the
11 pump prices, there are certainly a lot of
12 activity, people looking at the fuel economy
13 stickers on the sides of new vehicles, but we are
14 already -- I saw a newspaper ad showing over \$3.00
15 a gallon in San Francisco, and I think people are
16 still going to drive, and we still haven't seen
17 the real problem develop.

18 Anyway, I appreciate the time and I will
19 entertain any questions that you have.

20 PRESIDING MEMBER GEESMAN: Thank you,
21 Mike.

22 MR. SMITH: Before you leave, I do have
23 one question. Regarding the reference to the RPS
24 program, how would you envision a public goods
25 charge for transportation?

1 MR. EAVES: The obvious solution is
2 looking at a public purpose surcharge on gasoline
3 or diesel fuel and something that is nominal that
4 would raise the types of income that are needed to
5 incent the market, but not the penalty pricing. I
6 think the Energy Commission had a proposal looking
7 at 50 cent a gallon surcharge to achieve market
8 transformation. The numbers that we've seen or
9 more like a penny a gallon, and that is not -- it
10 defines the societal benefit of looking for
11 petroleum diversity, but it is not enough to
12 penalize a person to say, well, he is not going to
13 change his driving patterns and switch from
14 petroleum, but it allows the state to move forward
15 pursuing their objective which is fuel diversity.

16 There are several different mechanisms
17 on that, to do that. There are general bond
18 issues that are being contemplated, so we don't
19 really know what the format of that is going to
20 be, but those mechanisms of the public purpose
21 surcharge and everything on petroleum to be able
22 to move away from petroleum seemed to be one
23 option.

24 MR. SMITH: Your suggestion might be a
25 penny a gallon, do you think that would be the

1 ballpark number?

2 MR. EAVES: I think a penny a gallon was
3 one of the initiatives that is kind of sitting on
4 the table waiting to be submitted in some form to
5 somebody, you know, in the near future who have
6 been working. People have been working on the alt
7 fuel consortium has been looking at that for
8 probably six months now, and I don't know that
9 we've got a vehicle to introduce that yet.

10 MR. SMITH: Thank you.

11 MR. FONG: We have a gentleman
12 representing the Southern California Sugar Cane
13 Consortium. If you would step forward, and I can
14 bring your presentation up.

15 MR. WALKER: Thank you, Dan. I
16 appreciate the opportunity to talk to the
17 Commission, to the members of the audience about
18 something that I find it very exciting activity.
19 I think as you listen to this presentation, you
20 will see the answers to the tax issues that you've
21 been debating through the day.

22 I represent today Vice President of
23 Imperial Valley Fuels in California. I have been
24 commuting to Imperial Valley for ten years, and I
25 just recently was identified as a recognized new

1 person. Most of the residents in the Valley have
2 been there for their entire lives, and two of
3 them, Bill Batley and Claude Finnell, were really
4 responsible for the initial start of the Imperial
5 Valley Fuels concept in the Valley.

6 Bill is still very actively involved.
7 Claude, some of you may know him, he is suffering
8 from some illnesses, but still is actively
9 supporting us and doing what he can to forward our
10 activities.

11 We did not attend the stakeholder
12 meetings that were talked about earlier. We had
13 communicated upon occasion with the California
14 Energy Commission regarding our opinions, but our
15 schedule simply did not permit us to go to the
16 meeting themselves. This will really be the first
17 one where we made a serious presentation of what
18 we are involved in.

19 I apologize for -- this is a pretty busy
20 slide, but I wanted to put it up front to talk
21 about to some extent what the differences really
22 are between this kind of a project and the other
23 kinds of projects that you've heard about today,
24 and that you have been studying over a fair length
25 of time.

1 This is an ethanol project, but it is
2 also a job creation and an economic development
3 project. The impudice in most of the areas that
4 we are working in is job creation number one,
5 economic development number two, ethanol number
6 three.

7 So, let's take a look at how biomass
8 ethanol compares with a conventional corn industry
9 ethanol. The net energy is higher, 60,000 BTUs
10 versus 20,000 BTUs per gallon. You get a higher
11 whole land productivity. You have a lower cost
12 per gallon, and we can get a 15 DCF power
13 (indiscernible) at a \$1.00 a gallon whereas corn,
14 dry meal corn facilities generally start shutting
15 down around \$1.20 a gallon, \$1.18 was the last
16 time we saw that.

17 The volume potential here in California
18 can match by itself the kind of thing that is
19 being done in the Midwest, the 4 plus billion
20 gallons per year. Now that is not what is going
21 on in Imperial. Imperial is a small fraction of
22 that, but because of the diversity of feed stock
23 supply that can be accommodated by the process, it
24 is very much like the process that you heard about
25 earlier this morning that a lot of things can go

1 in. Basically, if it has cellulose in it, it is a
2 good candidate for feed stock.

3 The last item, municipal waste is where
4 we started in this process development. We came
5 to California, hit the same kind of legislative
6 road block as the fellows this morning did, tried
7 to put some reason into the discussion, that was
8 not to be had. So, we left California until we
9 had something else to bring to the table that
10 would be more interesting. That was almost ten
11 years ago.

12 Now the Imperial Valley has the
13 resources and the groups cooperating, and that is
14 one of the major things that we brought to the
15 table to finance and construct a commercial bio
16 refinery.

17 You get substantial economic
18 development, job creation, and tax revenue
19 benefits from that kind of activity. You also get
20 an income effect at the state level that can be
21 construed as a balance of payments benefit because
22 you are not sending money out of the state
23 someplace else for a product. Basically, you step
24 back and take a look at what we are doing in
25 Imperial. We can produce the fuel from locally

1 derived resources, fuel that can be consumed in
2 the area. So, it is a full cycle of economic
3 development, an engine for growth in Imperial, and
4 it can be spread to the rest of the state.

5 We see the major next development in
6 Central Valley based on agriculture waste and
7 other materials there. If the state does involve
8 itself in forest cleaning to prevent fires, that
9 is another feed stock. We haven't included that
10 in the 4 billion gallons per year.

11 I said that we were quite proud of our
12 ability to build an organization here. Imperial
13 Valley is an independent lot, and the farmers
14 didn't want to own the facility themselves, so co-
15 op was out of the order, but we put together the
16 situation where the farmers can earn quite large
17 profit for them and the bio refinery is going to
18 develop enough of a return on investment to
19 attract even venture capitalists investors.

20 This required a balance of stockholder
21 satisfaction. While the investors are looking for
22 a rate of return, all the things listed here,
23 farmers particularly are targeting the revenue per
24 acre is the thing they would like to see up, and
25 then the profit per acre off of that revenue.

1 I'm going to spend a little bit of time
2 on this slide because it seems to be a little
3 different than the kind of things that have been
4 talked about today. It is the kinds of things
5 that within Imperial are very important. We want
6 to improve the air quality, water quality is
7 important, and the consuming of water is an
8 important issue there of course.

9 The chain that is being grown uses less
10 water per acre than the alfalfa that it would
11 replace, but it generates an awful lot more
12 biomass and it generates an awful lot more money.

13 They are looking for increased
14 employment development. We view the establishment
15 of the bio refinery as an effect repatriation of
16 jobs that have been lost to foreign refineries
17 because the incremental imports to the United
18 States at this stage are refined products. The
19 incremental import is not crud. Basically, that
20 is the kind of development that we think we can
21 provide, and on a micro level, you can look at
22 when California buys ethanol from the Midwest,
23 that is a balance of payments issue. That is
24 something that is leaving the state to another
25 state.

1 A lower PM 10, we can use the wheat
2 straw that is burned in the area as a feedstock as
3 well instead of having people burn it in the
4 field, it can go into the process and generate
5 more ethanol.

6 Some major successes not only in the
7 organization side, but also in the growing of
8 cane. Although we are very proud of the fact that
9 the growers have been able to grow 62 plus ton per
10 acre, that is 18.6 dry ton per acre, that is
11 roughly four times the amount of biomass that you
12 get off the fuel that is growing corn including
13 the grain, including the (indiscernible).

14 We expect that because we have the data
15 from the experimental plots to prove it, and we
16 can get that up to 25 to 30 dry tons an acre in
17 five years.

18 This is what a cane field looks like
19 when it starts growing, and this is eight months
20 later. For perspective that is half of Lisa
21 standing in front of the cane field.

22 Those are two achievements, the
23 organization and the improving and growing. We
24 are also quite proud of what we've done in the
25 conversion of sugar cane to ethanol. Ordinarily

1 when you process cane as they do in Brazil, you
2 take sucrose, squeeze it out, you take that
3 sucrose and convert or ferment it to ethanol, and
4 use the V gas that is very wet and has very low
5 BTU value, but nevertheless you burn it to dry the
6 process.

7 What we do is add not only the sucrose,
8 but the fiber is broken down into other sugars
9 that we then can convert to ethanol. Instead of
10 getting roughly 40 gallons per ton for a whole
11 cane plant, a ton of whole cane plants, we can get
12 about 106 gallon per ton.

13 We also, and this is an important issue
14 in all these processes, you always wind up
15 shoveling around a whole bunch of water. The less
16 water you shovel around, the much better off you
17 are, and we have reduced the need for water
18 processing.

19 The stakeholders, we are guesstimating
20 at this stage because we have to -- we are still
21 negotiating on this one just how much they are
22 going to be able to expect, between \$500 and
23 \$1,000 an acre, and the investor profit is going
24 to be 25 to 30 ROI. That is sufficient for the
25 growers who are going to have to plant a perennial

1 crop, so they are sort of like making an
2 investment in capital when they plant this crop.
3 They are going to have to have the confidence that
4 we go ahead and they are going to make money out
5 it. They are coming to the board that everyone of
6 the group of hundred in the Cane Growers
7 Association has volunteered to start growing cane
8 once the plant design is finalized.

9 We expect start up in two years to reach
10 100 million gallons per year in five. By year
11 five, we will add some additional pretty valuable
12 by-products to the product spectrum, and I will
13 talk about that in a couple of minutes.

14 Profile of a plant is that it is sucking
15 up a 1,000 tons a day of dry biomass to produce 40
16 million gallons per year. The same rate it is
17 going to take 13,000 acres to get to 60 million
18 gallons per year, 21,000 to get to 100.

19 Now, how is that in relation to what the
20 Valley can do? There are 375,000 acres that are
21 in one crop or another that the farmer will profit
22 from switching to cane. That has the potential of
23 generating 1.5 billion gallons per year of
24 ethanol. It could be produced in 15 plants that
25 are just cookie cutters off of what we are doing

1 for the first plant.

2 It will slow down a little bit on
3 economic development because this is again one of
4 the issues that impacts the tax revenue for not
5 only the county, but the state as well, there are
6 big enough numbers. We are looking at \$3 billion
7 worth of investment ultimately, 12,400 new jobs, 4
8 billion in economic activity increase, and the
9 water consumption will be stable. That is a
10 critical issue for this area. We are switching it
11 out of things that are using at least as much
12 water already.

13 By the end of the five year period, the
14 initial Imperial Valley bio refinery will displace
15 65 to 120 million gallons per year of gasoline.
16 That is a pretty broad spectrum. The 65 is if you
17 only make ethanol. The 120 is if you shipped the
18 residual solids, manufactured gasoline components
19 out of it. This is our vision for 20 years down
20 the road the bio refineries are going to look
21 like.

22 You will have a bio refinery that is
23 taking in a whole bunch of local waste, local
24 products to make ethanol. That will go to a
25 blender. You blend it with the hydro carbons

1 needed to make the E 85, and that E 85 will be
2 distributed to local fuel stations. The renewable
3 gasoline components will go over the petroleum
4 refinery. They will blend that which is nominally
5 106 octane 0.4 revapor pressure blending stock to
6 make a renewable enhanced tighter carbon fuel
7 serviced in the same kinds of stations.

8 The stations, we have a limited window
9 of opportunity that thanks to Senator Obama of
10 Illinois, the Senate has passed a bill that is
11 actually on to a revenue bill at this stage that
12 will generate \$30,000 in credits for each pump
13 that is put into an E85 station.

14 Now I believe the E 85 is a solution
15 because it is a concentrated use of renewable
16 fuels of special characteristics. The state has
17 an amazing revenue of flexible fuel vehicles that
18 can use this stuff, it just doesn't have any pumps
19 to distribute it. So, the solution is to go to
20 Washington, get that money, build more pumps, and
21 be ready to distribute this kind of fuel.

22 In many respects, we believe that
23 California should follow the pioneering that the
24 Midwest did with ethanol, that they have shown an
25 aggressive approach to using that resource, a

1 resource that they have locally to keep their
2 economies healthy, keep them growing. California
3 can do the same thing.

4 The organization that currently drives
5 the ethanol business in the Midwest is more than
6 happy to have California members. We have had an
7 interesting experiment. It is always nice to have
8 economic experiments happen in the real world so
9 you can see whether your theories are really right
10 or not.

11 During the last increase in the spike of
12 gasoline prices, the E 85 stations in the Midwest
13 immediately went to reducing their cost to an
14 acceptable level of profitability for them, but
15 not just taking advantage of the higher margins,
16 so they were selling E 85 at between 20 cents and
17 40 cents a gallon lower than unleaded regular.

18 Now E 85 is 106 octane materials, so it
19 is sort of a good bargain at that price. It does
20 not give you the miles per gallon, but the sticker
21 effect of looking and seeing how much the per
22 gallon price was, was enough, and the gasoline
23 companies have proved that again and again.
24 People don't buy miles per gallon, they buy price
25 on a sticker.

1 The lesson to be learned there is how do
2 you use this to generate more revenue for good
3 works in the State of California. The Midwest is
4 showing you the way.

5 So, that is all I have to say here other
6 than to answer any questions you folks might have.

7 PRESIDING MEMBER GEESMAN: I guess as
8 you contemplate raising capital for a significant
9 investment in your plant, what role does current
10 US tariffs play and what level of risk do you
11 attach to those tariffs being changed in the DOHA
12 round of WTO talks?

13 MR. WALKER: We have not addressed that
14 issue directly with the financial community. At
15 this point in time, we have a lot of interested
16 parties, more actually than we can deal with on
17 this particular plant.

18 The issue of the DOHA round of tariffs,
19 we don't know that the resilience are going to
20 lose their -- to get rid of the tariff penalty.
21 We do know how well we can produce ethanol for,
22 and once you are up and running and have partially
23 depreciated your plant, you can follow the price
24 that other people are putting anywhere. That is
25 one of the real hurdles that it is sort of an

1 unseen hurdle that if you are trying to meet
2 payments for the money you borrowed for a facility
3 at the same time as the price is going down, that
4 is where the dry meal people have run into
5 trouble.

6 There is a good lesson in ethanol
7 prices. If you look at ethanol prices, it looks
8 like it is somewhere about bottling up towards
9 between \$1.40 and almost went up to \$2.00 for
10 awhile. That is dry meal people, they are people
11 that have to cover a lot more bills than the wet
12 meal people do who have a fully depreciated plant
13 and something that has to get out of the way
14 because they make their money in corn syrup. So,
15 there you see bill price at \$1.20, rail card for
16 the West Coast.

17 You really have to, if you are going to
18 be in this business, you have to recognize both.
19 We can't displace the dry meal people. We believe
20 that the ultimate price for the wet meal people is
21 somewhere around \$.80 plus/minus.

22 If we go down to \$.80, we are not going
23 to make a whole lot of money, but we are also not
24 going to go out of business. Translate to that
25 what the Brazilians are doing, I worry about

1 pricing there because it is a matter of political
2 expediency as well as economics. We can deal with
3 economics fine, but it starts to become a
4 political issue, then we are going to start
5 wanting that barrier kept in place.

6 The same thing is going to happen with
7 sugar I think too because that is something that
8 we can make a case that at 29 cents a pound for
9 sugar and \$1.40 a gallon for ethanol, a producer
10 can be in better shape making the ethanol than he
11 can be in selling the sugar. It may be that a
12 weakness develops for protecting sugar in that
13 round. I don't know, but I'm outside of that
14 particular field.

15 PRESIDING MEMBER GEESMAN: Thank you
16 very much.

17 MR. FONG: We have one last prepared
18 presentation. Mr. Bogart are you out there ready
19 to go?

20 MR. VAN BOGART: Good afternoon, my name
21 is John Van Bogart. I'm with Clean Fuel USA. Our
22 parent company is Delta Liquid Energy, and we are
23 located down in Southern California, and we have
24 nine regional offices throughout California.

25 Clean Fuel USA is a national refueling

1 network being developed throughout the United
2 States for propane refueling, and I wanted to go
3 over some of the aspects of propane with you here
4 today.

5 Clean Fuel partners, we are located in
6 Georgetown, Texas and also a parent company with
7 Clean Fuel Technologies, some of our partners
8 around the country in Georgia and in Pennsylvania
9 include Georgia Gas, Amerigas, which is the
10 nation's largest propane provider, also Mutual
11 Propane in Southern California, and my company,
12 Delta.

13 Our vision is to significantly increase
14 propane as a clean transportation fuel in the
15 United States and especially here in California
16 and to reduce toxic tail pipe emissions and to
17 reduce consumption of propane or consumption of
18 gasoline and diesel.

19 Our goals for our customers is to
20 provide convenient refueling, much the same as
21 they refuel with gasoline and diesel, the same
22 style gasoline and refueling pumps. Also provide
23 our customers with a fuel cost savings, which I
24 will get to in a minute and to help provide a 10
25 percent reduction of gasoline and diesel here in

1 California.

2 Propane is a simple hydro carbon, three
3 parts carbon, eight parts hydrogen. It is a by-
4 product of natural gas production and also of
5 refining gasoline and diesel. It is about 60
6 percent from natural gas and 40 percent from
7 petroleum.

8 Here in California it is about 50/50
9 split. Propane is typically stored as a liquid
10 and vaporizes at -40 degrees fahrenheit. It has a
11 similar energy value and content is gasoline when
12 it is stored on a vehicle, so the vehicle range on
13 propane is very good.

14 The global market for propane for motor
15 fuel as you can see on the graph has been growing
16 significantly over the last few years. It is
17 nearly doubled from 10 billion to it is projected
18 to be over 20 billion gallons globally in the next
19 few years.

20 Here in the United States, it is about
21 226 million, and here in California it is about 26
22 million gallons.

23 There are over 9 million propane
24 vehicles operating worldwide. In Europe, they are
25 converting over 2,000 vehicles a day to propane.

1 Propane is the number one alternative fuel
2 worldwide. It has been an alternative fuel for
3 over 50 years.

4 Here in the United States we seem to be
5 hooked a little bit on over regulation as far as
6 certification for vehicles. This is something I
7 believe that the Energy Commission and the
8 California Air Resources Board can really team up
9 on and solve a significant problem. This is one
10 of the biggest market barriers to alternative
11 fuels, not just for propane, but also natural gas.
12 Natural gas is experiencing some of the same
13 issues.

14 Total demand for propane has gone from
15 6.6 percent to 8.4 percent of total propane
16 consumption world wide and is projected to be 10
17 percent of total propane usage.

18 Here in the United States, we export
19 domestically produced clean burning propane fuel
20 to markets in Mexico and also Canada. Up and
21 comers such as China and India are expected take
22 some of the excess product in the next few years
23 of the global supply of propane because gasoline
24 and diesel and natural gas demands are scheduled
25 to increase significantly over the next few years,

1 propane being a consequence and a by-product of
2 those fuels.

3 220 million barrels which will translate
4 into about 11 billion gallons of fuel this year
5 alone will probably leave the United States and go
6 to other countries.

7 All propane is not created equal.
8 Typically, the natural gas product is a much
9 cleaner product. The product that is produced in
10 oil refineries are the fractionation of gasoline
11 and diesel is as not as good quality. A lot of
12 that product is shipped to chemical processing
13 plants where it is used for other products.

14 The propane that comes out of those
15 refineries is actually a better product than the
16 natural gas product for propane used in chemical
17 feed stock.

18 Clean Fuel USA, we are in the process of
19 developing a stand alone refueling network from
20 production to the fuel pump where it can go into
21 the vehicles, and we are doing this through rail
22 car terminals. We have two operating in
23 California now, we've got two more under
24 development.

25 We bring product from the mid continent

1 via rail cars and also via transport, and this is
2 a typical tank farm. I believe this is up in
3 Lancaster where they had some snow that year.

4 Creating bulk storage facilities at some
5 of our plants. This is the top picture there is
6 our Pomona facility which the California Energy
7 Commission helped fund with the bulk storage tanks
8 in the background. Those are designated for motor
9 fuel.

10 Creating partnerships is very important
11 with alternative fuels. One of the other market
12 barriers is the convenience of refueling and land
13 use. We have partnered with Conoco Phillips. In
14 Colorado, it is Conoco Phillips. Stations in
15 Texas, it is Phillips 66. Here in California it
16 is the 76 brand stations. Where we are developing
17 refueling on the island with gasoline and diesel,
18 and I think this is a significant development for
19 alternative fuels to be conveniently located at
20 traditional refueling stations.

21 The picture down below is a Clean Fuel
22 USA station at Austin Airport. The Clean Fuel
23 concept has an access card where you wipe your
24 access card, it is an electronic point of sale,
25 then you use your voyager, that is a state credit

1 card or visa/mastercard, and then you start
2 refueling.

3 The pump is a typical pump that you
4 would see at an Arco station or a 76 or a Shell
5 station. It is virtually the same pump. This is
6 pump is up fit by Clean Fuel Technologies to
7 accept liquid propane gas. Also the manufacturer
8 in Texas, they also make this for the ethanol.

9 This might be a little hard to see on
10 that screen, but this is a fuel cost comparison
11 that we did with the vehicles in our fleet and
12 also a transportation fleet in San Luis Obispo
13 County. The top line there that is in blue, this
14 is a gasoline vehicles. The top line is a 35,000
15 GBW at 35,000 miles a year.

16 The annual cost savings with propane
17 over gasoline is about \$4,000 a year. If you go
18 down to the middle chart, the yellow, compared to
19 diesel, diesel priced at \$2.55 a gallon and
20 propane at \$1.70 a gallon which is our current
21 street price. The state realizes a \$1.35 a
22 gallon. Still with diesel, you can save about
23 \$500 a year on fuel costs over diesel. You are
24 talking alternative fuels to save money over
25 diesel, that is pretty significant.

1 State of the art refueling site costs
2 about \$100,000. A return on investment if you had
3 24 vehicles running at that 35,000 a year, you can
4 recoup that cost in one calendar year.

5 Historically, propane has been 20 to 30 percent
6 less than the price of gasoline, and is currently
7 about 65 percent of the price of gasoline which is
8 35 percent less.

9 24 hour refueling stations are being
10 developed throughout California. Propane powered
11 vehicles, this has been one of the other market
12 barriers is now facing other fuels such as natural
13 gas. The availability of vehicle platforms. The
14 first picture is of the Cal Trans vehicle. They
15 run about 1,600 of these.

16 Where we have deployed Clean Fuel USA
17 sites that are open 24 hours and they can go in
18 and use their voyager card. We have seen them go
19 from 10 percent propane usage to over 90 percent,
20 and I believe in one of the earlier presentations
21 they were talking about some of the counties that
22 were having some success in San Luis Obispo being
23 one of those.

24 Refueling infrastructure, in the United
25 States there is about 15,000 refueling facilities,

1 1,500 here in California, and I would say about
2 900 of those are what I would call motor fuel
3 friendly.

4 Typically a propane marketer will go to
5 a fleet and will provide refueling infrastructure
6 behind their gate at no charge. Typically takes
7 about ten vehicles to do that. One of the most
8 significant developments for us this year is the
9 General Motors KL 5 option. We have seen Ford and
10 some of the others retrieve from alternative fuels
11 in the last few years, and I think GM has kind of
12 got it right.

13 What they are doing is they are
14 preparing a vehicle which is gaseous prepped, it
15 is conducive to alternative fuels, and they are
16 putting it out on the marketplace, and it is up to
17 us as a industry to go ahead and convert those
18 vehicles with a credible industry standard
19 conversion program or upped it program much like a
20 cabin chassis is taken from the manufacturer and
21 taken over to a bus manufacturer and they make it
22 into a passenger bus.

23 Six new platforms will be available June
24 of this year in the Chevy truck. Also another
25 development that is not on this screen is the

1 Hino, the heavy duty product which is going to be
2 a 300 horse power style engine. That will be
3 available also in June.

4 Street sweepers, refuse haulers, things
5 of that nature. The other picture there, the
6 white shuttle bus, that is the GMA.1 vehicle
7 platform that is available. Interestingly enough,
8 this new technology of liquid fuel injection for
9 propane provides a greater level of horse power,
10 tork, and also fuel economy than gasoline.
11 Because propane vaporizes at -140 degrees, when
12 you introduce that fuel to the cylinder, it has a
13 thermal efficiency, and you are able to get a lot
14 more performance than the old carbureted style
15 systems.

16 MR. SMITH: Excuse me. What
17 certification issues do you anticipate with the
18 KL5 option?

19 MR. VAN BOGART: About a million
20 dollars, and that has been done, and those will be
21 available this year. One of those, the market
22 barriers is a financial one quite frankly.
23 California has the deterioration factor, the DPA
24 does not have, which can cost an additional
25 \$300,000 to \$400,000 to certify a vehicle. The

1 emission standards are the same, but they just
2 want to know that the deterioration factor is
3 going to be there. There is no real proof that
4 their deteriorating faster, it is just that CARB
5 has put this barrier up there to insure the
6 emission standards for the life of the vehicle
7 will be there.

8 Grant funding opportunities. The
9 California Energy Commission has partially funded
10 about 29 sites, about half a million dollars, also
11 the DOE through the Clean Cities Program in Texas,
12 Sacramento, and Los Angeles has funded stations,
13 and we currently have applied for additional
14 stations in East Bay and also Western Riverside.

15 These are some of the locations that we
16 have going up in California. We first developed
17 the 101 Corridor in San Luis Obispo, that is where
18 our offices are, and it was easy for us to service
19 that. As I had mentioned before, we are seeing
20 the state fleets that access those sites, we are
21 seeing a significant increase in propane fuel
22 usage.

23 This is the new glacier bus 8.1, low
24 ford technology. This was a project that was put
25 on by the US Department of Energy, also the

1 Propane Education and Research Council. Kind of
2 the changing of the guard, these were the old
3 jammer busses. If any of you have been to Glacier
4 National Park, they are going to retire these
5 busses, even though they are completely redone by
6 Ford, they are going to replace them with the new
7 GM 8.1 jammer bus.

8 Reducing petroleum consumption. We
9 believe that up fits are the wave of the future.
10 OEM's quite frankly have lost millions of dollars
11 over the last few years trying to provide vehicles
12 for the all fuels industry, and I do not see them
13 reentering that market any time soon.

14 Europe has got it right. Like I had
15 said, they are converting 2,000 vehicles a day to
16 propane, and they are not just doing it on
17 propane, they are converting them to natural gas.
18 They are doing it with ethanol. They are doing it
19 with bio-fuels. With all the choices and the
20 options that are represented in this room here
21 today, they have developed policy that is
22 conducive to alternative fuels rather than
23 creating regulations that might advance cleaning
24 of the air, but I believe alternative fuels do
25 that anyways.

1 Developing a policy that does both
2 reductions of emissions and petroleum consumption,
3 I think, is our target and our goal.

4 Just to kind of summarize, the Propane
5 Education and Research Council was enacted by
6 Congress several years back and which all
7 marketers have a check off fee. So, when they buy
8 a gallon of gas from the rack, they pay into this.

9 They have now formalized a motor fuel
10 transportation committee in 2005. This is also a
11 significant development for our industry. We now
12 have industry funding to produce 50 state
13 certified vehicles and the KL 5 platforms and the
14 Hino platforms that will be available this year
15 are just a first few vehicles to come on line.

16 The market potential for propane,
17 virtually any gasoline vehicle can be converted.
18 Realistically, we are going after fleets.
19 Schwann's Food Service, they currently operate
20 7,500 propane vehicles here in the United States.
21 It is the largest alt fuel fleet in the country,
22 and they have saved millions of dollars on just
23 the fuel cost savings alone.

24 Propane engines last as long if not
25 longer than diesel. Propane fuel like CNG fuel

1 does not contaminate the oil with bleed through on
2 the cylinder walls, especially in cold starts,
3 emission problems with cold starts of gasoline,
4 diesel engines with gaseous fuels such as propane
5 and natural gas is not an issue either, so I think
6 that the thing I would like to leave with you is
7 up fits are the wave of the future for alternative
8 fuels in this country, and especially in this
9 state.

10 Until we can get to that silver bullet,
11 if it is hydrogen grade, if it is not, what are we
12 going to do for the next ten or fifteen years. I
13 believe that propane, natural gas, and the other
14 fuels that are represented here today all believe
15 that we can do a good job to add reduction of
16 petroleum.

17 Thank you.

18 PRESIDING MEMBER GEESMAN: Thanks very
19 much.

20 MR. FONG: That completes the series of
21 prepared presentations. We might go to other
22 individuals who had submitted blue cards.

23 PRESIDING MEMBER GEESMAN: Yeah, I've
24 got blue cards. Joe Sparano.

25 MR. SPARANO: I thought you would never

1 ask. Actually --

2 PRESIDING MEMBER GEESMAN: I appreciate
3 your patience.

4 MR. SPARANO: -- people that I work with
5 know that I am patience-challenged, so one of my
6 New Years resolutions was to practice being more
7 patient and I want to let you know today was
8 graduation day.

9 First I would like the indulgence of the
10 audience to make a couple of comments that I
11 believe to be factual in nature and maybe put a
12 few things in perspective. There have been a lot
13 of good presentations today. I want to share with
14 the group that the petroleum industry when it
15 comes to taxes, which were mentioned earlier,
16 right now in the State of California regardless of
17 what one may think about the fuel, we pay \$8
18 billion a year. I think we are shouldering a
19 pretty good load, and that is reflective of a good
20 business that works hard to try and be cleaner and
21 meet standards that are set for us by the state or
22 that are a product of our innovation. The fact is
23 we pay \$8 billion a year.

24 PRESIDING MEMBER GEESMAN: Is that
25 income and property tax or income property excised

1 and sales tax?

2 MR. SPARANO: It is all the taxes, \$8
3 billion in total, and I think for our industry,
4 Commissioner, it would be made up predominantly
5 of (indiscernible) tax, property tax, those types
6 of things.

7 PRESIDING MEMBER GEESMAN: Can you share
8 with us an estimate of revenue per year to compare
9 that \$8 billion to?

10 MR. SPARANO: The companies don't
11 segment out California alone, so I really don't
12 have it. I'll get it for you, though --

13 PRESIDING MEMBER GEESMAN: I'd
14 appreciate it.

15 MR. SPARANO: Yeah, I'll take a shot at
16 that. We do pay \$45 billion a year in payroll in
17 this state, so the revenue number is big.

18 PRESIDING MEMBER GEESMAN: Yeah, I would
19 presume.

20 MR. SPARANO: Okay, there is no getting
21 around that. Another observation, I heard a lot
22 today about reducing petroleum and a lot of
23 examples have been given of other products that
24 can take its place.

25 Gas to liquids, that is the conversion

1 of natural gas to clean diesel, the grade process.
2 One of our members, Shell, is not bashful about
3 advertising its activities in that area. Shell
4 has entered into agreement with the Nation of
5 Gutter, whichever way you pronounce it. I think
6 that deal is 6 billion. They already have a plant
7 operational in Malaysia. They have a deal with
8 the Peoples Republic of China who are multi
9 billion dollars, and that is all to take natural
10 gas and convert it to clean diesel. They are in
11 that game big.

12 Exxon Mobile, another large size company
13 is investing more than \$10 billion dollars in
14 Gutter on new projects for natural gas liquids.
15 Shell is also in for natural gas liquids in the
16 same nation. So, there is a lot of activity that
17 is not gasoline or diesel centric, but that uses
18 other forms of petroleum to be extracted from the
19 ground and contribute to our use here and
20 throughout the United States.

21 Fuel cells, British Petroleum has made
22 no secret of the fact that they are spending
23 hundreds of millions a year trying to do
24 appropriate research and development into hydrogen
25 fuel cells. So, I just wanted to for the record

1 make sure that those facts got out on the table.

2 Again, natural gas is a fossil fuel.

3 Propane is a product of a fossil fuel conversion,

4 whether it comes from natural gas as was

5 accurately stated very clean or whether it is a

6 product of crude distillation where in some forms

7 it is not quite as pure, and in other forms after

8 secondary chemical processing, it comes out quite

9 clean.

10 They are all viable alternatives, they

11 are viable products that can be used to reinforce

12 and support California's transportation fuel

13 needs. There is a method to my madness here

14 because when I make the comments that I have

15 prepared, I think you will see where that fits

16 because we do in fact have a view of how to deal

17 with the situation that the Energy Commission

18 staff has so ably presented to us today.

19 It is probably too late to say good

20 afternoon, but good afternoon anyway. Joe

21 Sparano, I am President of the Western States

22 Petroleum Association. WSPA understands the

23 purpose of this work shop is to obtain the active

24 participation of all interested parties in

25 analyzing options to reduce petroleum fuel use.

1 However, we question whether reducing
2 petroleum fuel use rather than adding to the
3 existing supply of clean petroleum fuels is the
4 pathway to future energy supply sufficiency. I
5 think it is an important point. It is a different
6 view, probably different than most of the views
7 that have been expressed today, but I think it has
8 some merit and hopefully I can communicate some
9 information in that respect.

10 There are four reports that make up this
11 section, the demand section of the 2005 IEPR. One
12 of them was released yesterday. I saw it for the
13 first time really late last night. I actually
14 have read the whole thing in the back of the room
15 today, so I had an opportunity to read it, but I
16 don't think it is reasonable to expect that we can
17 make really detailed comments about it. There is
18 just not enough time.

19 PRESIDING MEMBER GEESMAN: No, and I
20 think what they've done is to extend the comment
21 period to May 25.

22 MR. SPARANO: That is what I wanted to
23 share. We will produce comments that are in
24 writing and communicate them. I have a few
25 comments, but they are really not -- I wouldn't

1 want to characterize them as really well thought
2 out in detail because the time frame just hasn't
3 been available.

4 Let me try with a couple of things. The
5 latest report indicates that to achieve the
6 petroleum fuel reduction goal in the 2005 IEPR, a
7 combination of efficiency in alternative fuel
8 options will be needed.

9 The report observes that and further
10 observes that the new greenhouse gas regulation
11 will when fully implemented by 2016 result in a 30
12 percent reduction in fuel demand as compared to
13 automobiles built prior to 2009.

14 Perhaps there could be additional
15 analysis that says that this greenhouse gas
16 regulation and those are your figures, the figures
17 from the report in terms of fuel demand reduction
18 and other measures that are cited in the report,
19 such as fuel efficient replacement tires, consumer
20 driving tips, truck stop electrification together
21 might be sufficient for the state to achieve a
22 natural. That is in my view, natural means
23 "unforced and unsubsidized" reduction in the
24 growth of petroleum fuels used.

25 I choose my words carefully. We've

1 talked about whether you want to reduce demand for
2 petroleum or the 2076 direction of the growth in
3 demand, the growth rate in demand, so I think some
4 of the things that the report cited are very
5 pointedly supportive and viable ways to reduce
6 that growth.

7 We are all aware that some alternative
8 fuels currently under development will eventually
9 achieve significant market acceptance and
10 penetration. That is a good thing. It is
11 reasonable, however, to ask why the state needs to
12 continue focusing on mandates for reduction in
13 petroleum fuel use.

14 A number of the alternative fuels
15 considered don't appear to be economically
16 attractive or practical for near to mid term mass
17 use without very significant state subsidies and
18 investments and higher consumer costs. I think
19 that was brought out very well this morning in the
20 discussion that the initial use carries with it a
21 pretty substantial cost factor.

22 Let me return to some overall comments
23 about the group of reports. I believe there were
24 four that made up this section. As we noted
25 yesterday, we oppose policies that call for

1 reducing demand for the cleanest burning petroleum
2 fuels on the planet. I think very simply that
3 reduces the potential for investment for those who
4 want to continue providing those products.

5 To be more specific, WSPA continues to
6 oppose any efforts to reduce petroleum demand
7 while California's supply/demand imbalance
8 increases. The imbalance is likely to increase if
9 the Energy Commission continues to pursue the
10 stated policy of reducing gasoline and diesel fuel
11 demand by 15 percent from 2003 levels by 2020.

12 It goes beyond that now. That was a
13 report that a recommendation needs to be adopted
14 by the governor and the legislature. There is
15 legislation that was mentioned by one of the
16 speakers earlier, SB 757, which carries with it
17 codifies in law the fact that you must reduce at
18 certain times an amount undetermined, the 15
19 percent has disappeared, and it is an open ended
20 amount that would be reduced by law.

21 I don't think that is healthy if all of
22 us believe that the state's regulations that have
23 been promulgated and adopted that make this fuel
24 cleaner than any you can buy anywhere on earth
25 doesn't mean that we have a pretty good product

1 that we are working with.

2 Our whole pitch, our whole advice to
3 this group is let's use a fuel that we have. If
4 we need to make it cleaner, we make it cleaner.
5 Let's augment it with the fuels that make sense
6 economically and that provide the proper and
7 sufficient amount of fuels so that California
8 consumers can continue the habits they are used to
9 and that the economy can grow.

10 Because if that doesn't happen, no
11 matter what the fuels are that are developed in a
12 contracting economy, we are going to have some
13 problems and probably ones that we don't really
14 want.

15 PRESIDING MEMBER GEESMAN: Let me make
16 certain, Joe, I understand what you said. I
17 believe you said that WSPA will continue to oppose
18 the state's desire to reduce the demand for
19 petroleum. Earlier you talked -- you support
20 natural demand reductions, presumably it is the
21 unnatural ones that you are opposed to. That you
22 will continue to oppose that policy as long as
23 California's supply/demand balance is in my words
24 out of whack?

25 MR. SPARANO: I said that the

1 supply/demand is out of balance now, and if you
2 continue, if the state has a policy that continues
3 to force a reduction in demand, then that
4 supply/demand imbalance is likely to expand. I
5 don't think any of us want to see that. That is
6 what I said.

7 PRESIDING MEMBER GEESMAN: I want to
8 focus on the imbalance part because I think in
9 many ways it is motivated by a concern about
10 diminishing supply and the increased reliance on
11 imports. I think that we tend to regard that the
12 increased reliance on imports as a negative factor
13 for the California economy. When you speak of
14 supply, I take it you are relatively neutral about
15 that import factor?

16 MR. SPARANO: I think, as I mentioned
17 yesterday -- let's make something clear. Imports
18 are a product of our public policy.

19 PRESIDING MEMBER GEESMAN: Sure.

20 MR. SPARANO: They are what they are
21 because we have public policy choices that we've
22 all made that don't allow us to drill in a lot of
23 places and produce our own energy. They have not
24 made it easy or practical for investors to build
25 refineries. We haven't built one in 30 years, 35

1 years in California. Those factors are what they
2 are.

3 If imports are what is needed to bridge
4 the gap between available supply because there may
5 not be another plant built here. I don't know, I
6 don't have any special insight, but I do know the
7 factors that deal with that. They include
8 attitude, not in my backyard, the regulations
9 exist that require permits of a very complicated
10 nature that so far have been a pretty big hurdle
11 for lots of companies. You and I have spent some
12 time trying to figure out how to fix that. I
13 think if we can, it will be a real good
14 contribution.

15 The third thing is cost. You try to
16 build a refinery that is the average small
17 California refinery of 100,000 barrels a day, it
18 costs \$2 billion to \$2.5 billion to even \$3
19 billion. The refinery that is proposed in Yuma,
20 Arizona which has been permitted to construct is a
21 \$2.8 billion project that has \$300 million of
22 financing. Those are huge hurdles.

23 Even with the demand forecast that I
24 will get into -- excuse me, the forecast of demand
25 that is generated through the population growth

1 and price assumptions that are made, which I don't
2 know any better. I don't have a better price or
3 population growth forecast, but everything in
4 those forecasts indicates that demand will drop.

5 If we are unable to keep up with it, the
6 only way, and the rest of the study, the
7 infrastructure study that we talked about
8 yesterday suggests that even with a constricted
9 demand forecast, that imports will still be
10 required. Huge amounts of crude and of products,
11 more so than we are importing today. So, yeah, I
12 think imports is a way to keep that balance in
13 order to insure that those imports are available
14 to California consumers at a reasonable price, we
15 are going to have to do some things to the
16 infrastructure.

17 I think that is another thing where we
18 shared a common concern and tried to figure out
19 how we might make that work better. So, that is
20 what I was referring to about the imbalance.

21 PRESIDING MEMBER GEESMAN: Thanks for
22 the clarification.

23 MR. SPARANO: Okay, thank you for the
24 question.

25 What I wanted to get across perhaps so

1 far inarticulately, our industry supports a
2 petroleum plus approach to California's energy
3 supply future. That means increasing existing
4 clean burning supplies and promoting funding for
5 research and development of cost effective
6 alternative fuel solutions that are not mandated
7 or subsidized. I think we are pretty clear about
8 that.

9 The actions of the members, the member
10 companies are very clear that they are spending a
11 lot of money into research and development. It
12 really makes sense. If you are an energy company,
13 as many of our companies now are, your future, the
14 future of your shareholders is built around
15 energy. In order to be in the energy game, you
16 better be developing the fuels of the future. I
17 think that is being done.

18 The fact is, we have not yet come upon
19 very many that show economic equivalents if you
20 will, buying power versus gasoline and diesel, a
21 little bit more traditional transportation fuels.

22 We understand the challenge the State of
23 California is facing as it attempts to meet its
24 future transportation energy needs. However, we
25 believe that California's energy future needs to

1 include a diverse suite of the most cost effective
2 and clean fuels to keep the economy moving forward
3 and to retain a good quality of life in this
4 state.

5 I have a few more observations on the
6 Energy Commission's transportation energy demand
7 forecast. First, the demand forecast reinforces
8 the infrastructure report conclusion that
9 additional petroleum infrastructure will be needed
10 to fill the gap between in-state production of
11 refined products and consumer demand.

12 The Energy Commission demand forecast
13 assumes a significantly reduced demand for
14 gasoline based on the assumption that the new
15 greenhouse gas regulations will be implemented on
16 schedule. If that doesn't occur, and I don't know
17 better than anybody in the room whether it will or
18 won't, but if it doesn't, there is going to be an
19 even greater need for us to support and expand our
20 infrastructure for petroleum.

21 All the major demographic and economic
22 assumptions and other growth factors that drive
23 the transportation energy demand call for lower
24 than historical growth rates, I mentioned that
25 briefly earlier. It includes lower than

1 historical average population growth over the 20
2 year period of this demand forecast, reduced
3 immigration, and a lower birth rate, in addition
4 to base case gasoline forecast, the significantly
5 higher than the one that was in the 2003 IEPR
6 assumption.

7 PRESIDING MEMBER GEESMAN: Now, Joe,
8 prices are significantly higher than they were in
9 2003.

10 MR. SPARANO: No, I know, that was a
11 neutral statement, Commissioner.

12 PRESIDING MEMBER GEESMAN: Okay.

13 MR. SPARANO: It was just an observation
14 of fact.

15 PRESIDING MEMBER GEESMAN: Okay.

16 MR. SPARANO: Two years ago it was
17 \$1.70, now it is \$2.26, in 2025 I think that
18 simply reflects -- my whole notion here is to look
19 all of the various indicators that one uses to
20 build a demand forecast and to observe for the
21 group that they all go in one direction. They may
22 all be right, I have no reason to disbelieve or
23 believe. If they are not all right, it suggests
24 that the gap gets wider, and that is the point.

25 PRESIDING MEMBER GEESMAN: I would agree

1 with that, and before you contaminate my position
2 with guilt by association, I think both
3 Commissioner Boyd and I have expressed some
4 concern about the population assumptions. We may
5 have a countervailing concern about the price
6 series, but we don't know enough about that yet,
7 and we will look at these.

8 My concern is that, in fact, the
9 forecast tends to understate the problems that the
10 infrastructure report yesterday identified, and I
11 am not certain that in an area that has
12 historically been characterized by so much failure
13 of government policy, both at the state and the
14 federal level, that it reasonable to base your
15 assumptions on a bunch of happy solutions.

16 That is my position, don't you
17 contaminate it by associating yourself with it.

18 MR SPARANO: You know, no one has ever
19 called me a contaminant. I've been called a lot
20 of things, and in New Jersey many that I can't
21 repeat here.

22 PRESIDING MEMBER GEESMAN: Your members
23 will feel better about you if you go back and tell
24 them that I did.

25 MR. SPARANO: It will be my pleasure,

1 Commissioner.

2 Now just a few comments on alternative
3 fuels. Specific to that alternative fuels
4 commercialization report, I have a few general
5 process comments and some specific observations.

6 The process comments I want to read into
7 the record. You will understand why in a minute.
8 They relate to the anti-trust issue that came up
9 yesterday when Commissioner Pfannenstiel asked me
10 about a projection for the future.

11 With respect to alternative fuels, the
12 Energy Commission provided WSPA with the
13 opportunity to participate in the three of the
14 fuel working groups: bio-diesel, gas-to-liquids,
15 and ethanol.

16 Consistent with prior requests that WSPA
17 has made relating to staff's alternative fuels
18 report, we request than an all CEC documentation
19 our trade association be listed as a monitor and
20 not a member of the working group. There is a
21 reason for this.

22 We would like also to have a footnote
23 near the working group member listing that states,
24 this is direct from the lawyers that on occasion
25 don't like me very much, "WSPA has no information

1 or opinion on future market share or penetration
2 of any fuel or fuel blending component. WSPA does
3 not agree or disagree with the working groups'
4 conclusions."

5 As mentioned yesterday, these are really
6 important notations in the context of anti-trust.
7 They are not against the report in any way or
8 against the hospitality the Commission showed us
9 in allowing our members to participate.

10 The WSPA staff has recommended that I
11 urge to ask that the sections of the report that
12 are now written to reflect stakeholder advocacy
13 perhaps be rewritten more in the fashion of the
14 ethanol section which specifically identifies and
15 references input from a variety of shareholders.

16 Some of our members felt like what they
17 read in the report didn't so much reflect as was
18 stated, an advocacy position, but rather that
19 might be a little too strong. I wish for the
20 Commission staff to consider a look back and see
21 if my comment has some merit.

22 You know we don't support intervention
23 in the marketplace, and therefore, we don't
24 support the significant subsidies and mandates
25 that the report indicates will be needed to move a

1 number of the fuels, the alternative fuels toward
2 their targeted market share goals.

3 On the other hand, we find this report
4 better than balances the pros and cons of
5 alternative fuel penetration and some earlier
6 attempts. An interesting observation again, I
7 quote from the report, the state may need
8 additional suggestions to meet the non-petroleum
9 fuel goals of 2020. That is extracted from the
10 report, and I think it reflects perhaps some of
11 the frustration, but also the realization that
12 there is a lot of work we all need to do if we
13 want to get alternative fuels to augment the
14 supply of the fuel that we have.

15 In terms of funding, there is a
16 recommendation that a Carl Moyer type program be
17 set up. The report also states, and I quote,
18 "Since the Carl Moyer program funds the most cost
19 effective projects, alternative fuel projects will
20 not be very high on the list." That seems to be a
21 real important point and one that has to be
22 addressed.

23 I would like to close by mentioning two
24 other comments in the report are worth noting.
25 The first one is, "Compared with the other

1 alternative fuels, hydrogen commercialization has
2 the most barriers to overcome." Secondly, "Gas to
3 liquid diesel fuel used in California appears to
4 have one of the most difficult market thresholds
5 to cross."

6 Now these fuels show some promise, and
7 there has been a lot of talk about hydrogen
8 highway and I've been on record mentioning our
9 members are heavily invested in gas to liquid, so
10 there is no anti-voice here, simply that the
11 comments suggest that a lot more work needs to be
12 done before any of those fuels is ready to replace
13 petroleum fuel, which gets me all the way back to
14 where I started which is it would be great to see
15 the Energy Commission come out and advocate
16 augmenting existing clean fuels with whatever all
17 of us can develop as alternatives.

18 Those are the end of my comments, and I
19 would be happy to answer your questions.

20 PRESIDING MEMBER GEESMAN: Several of
21 your members are quite actively involved in the
22 development of LNG around the world. You didn't
23 include either LNG or compressed natural gas as
24 one of the alternative fuels that you wanted to
25 pay special attention to.

1 MR. SPARANO: I just didn't -- I didn't
2 specifically mention them. I think I mentioned
3 LNG specifically yesterday. I tried not to be too
4 repetitive. I can hear myself already that I was
5 a bit. LNG we are completely supportive of.
6 Compressed natural gas, we support that. What we
7 don't support and we are on record before the
8 Energy Commission and before the PUC is that we
9 know we don't produce compressed natural gas, so
10 we get into the issue of what is the specification
11 when it goes into the pipe as it heads for the
12 refueling station. It isn't anti-gas in any way,
13 shape, or form.

14 PRESIDING MEMBER GEESMAN: Thanks very
15 much, Joe.

16 MR. SPARANO: Thank you.

17 PRESIDING MEMBER GEESMAN: Dave
18 Modisette.

19 MR. KOYAMA: It's Ken Koyama again. I
20 just want to make one statement about the previous
21 speaker's quoting of the alternative fuels
22 commercialization report. On the Moyer cost
23 effectiveness, that was in reference to an air
24 quality program, and only an air quality program.

25 It was not intended that Moyer will

1 always be against alternative fuels or alternative
2 fuels will not fair very well in the Moyer
3 program. During this phase for cost
4 effectiveness, alternative fuels will have a
5 difficult time getting funding for Moyer programs.

6 If we had a Moyer-type program for
7 petroleum displacement, we may have an opportunity
8 to shape it in such a way that alternative fuels
9 would fair significantly better.

10 PRESIDING MEMBER GEESMAN: Dave.

11 MR. MODISETTE: Yes, thank you,
12 Presiding Member Geesman and staff. I'm Dave
13 Modisette, I'm the Director of the California
14 Electric Transportation Coalition.

15 You know, I did my sales presentation in
16 December, so I didn't feel like I needed to repeat
17 it today. My comments today are really directed
18 at the alternative fuels commercialization paper
19 that Ken presented. I should probably apologize
20 in advance, but just for the organization of my
21 comments because they start out pretty well
22 organized, but as I get to the end, they kind of
23 evolve into almost illegible scribbling. I'm
24 going to keep my comments brief.

25 I don't have any comments at all

1 unfortunately on the paper that was released
2 yesterday, the options paper, so I can submit
3 written comments on that.

4 PRESIDING MEMBER GEESMAN: That would be
5 helpful, and the staff has identified May 25 as
6 the deadline I'd like those in by.

7 MR. MODISSETTE: I'm going to first
8 comment on the staff technical evaluation for
9 electricity as a transportation fuel which begins
10 on page five of the alternative fuels
11 commercialization paper. Secondly, and I think
12 more importantly on the policy recommendations,
13 both the stakeholder recommendations which begin
14 on page 28 and the staff findings and options that
15 are at the end of the paper.

16 On the staff technical evaluation, we
17 found it to be accurate based upon the information
18 available to you which was primarily a report done
19 by Tiax and which was filed with the Public
20 Utilities Commission in 2002.

21 That report and the staff report
22 identified a population of electric transportation
23 technologies of about 300,000 in 2002 increasing
24 by 2010 from approximately 500,000 to almost
25 700,000.

1 Here I want to note that report did not
2 include all of the technologies that we are
3 evaluating now, such as truck stop
4 electrification, alternative marine power, and
5 electric stand by for truck refrigeration units.

6 Potential petroleum displacement as the
7 staff reported is 900 million gallons of gasoline
8 or diesel per year. This is one of the largest
9 figures for petroleum displacement of all the
10 fuels evaluated in the staff report. In fact, it
11 was third and counted for about 20 percent of the
12 total. That is from Table 16 on page 27.

13 We are updating the figures from the
14 2002 Tiax report, and here I need to apologize to
15 you and to the staff. I thought that report would
16 have been done long before now, but I think we are
17 close. There are only a few numbers that are
18 still in contention, and we have turned over all
19 of our draft numbers and documents to the staff
20 for review.

21 PRESIDING MEMBER GEESMAN: Do you have
22 time frame when you would estimate that might be
23 submitted:

24 MR. MODISETTE: I am tempted to say two
25 to three weeks, of course, that is what I've said

1 to you before, but we are meeting with Tiax
2 tomorrow. The only numbers that are still in
3 contention are the on-road numbers. None of the
4 truck stop electrification or industrial numbers
5 or port numbers are in contention at this point.

6 A couple of comments on the technical
7 section. First a question, are you going to
8 examine and include in your analysis and reports
9 petroleum consumption from off-road vehicles and
10 equipment.

11 The reports seem a little undecided
12 about this as I read or heard the transportation
13 forecast numbers today, that sounded to me like it
14 was exclusively an on-road forecast.

15 PRESIDING MEMBER GEESMAN: That is the
16 way it sounded to me too.

17 MR. MODISSETTE: In Ken's report, Table 1
18 is clearly just on-road vehicles, but later on he
19 does discuss some off-road vehicle technologies.
20 I do not know just what the off-road consumption
21 is, but I did kind of pull a couple of charts from
22 an ARB presentation last year on the state
23 implementation plan, and I will just kind of share
24 some of those with you.

25 They showed the truck population, the

1 on-road diesel truck population in California in
2 the year 2000 as 700,000 trucks. At the same
3 time, they showed the off-road diesel population
4 as an additional 500,000. Of course, that is
5 mostly construction equipment. It is farm
6 equipment, it is airport ground support equipment,
7 and other diesel equipment.

8 I guess my point is if there is 70
9 percent more of this off-road equipment than there
10 is the on-road equipment, then my guess is the
11 off-road consumption is large, that it is
12 significant.

13 Also on the air quality side, I guess I
14 just want to note that in terms of particulate
15 matter from all sources including on-road and
16 stationary and off-road sources, the ARB says that
17 74 percent of the particulate matter is from off-
18 road diesel sources. So, the air quality problem
19 on the off-road side is much much larger than the
20 on-road side.

21 I guess this is just to say that we
22 would encourage you to include in your reports and
23 your analysis the off-road petroleum consumption
24 and any displacement that we can achieve in that
25 sector.

1 My second comment was really, which I am
2 going to withdraw, but my second comment that as I
3 read Ken's report, I was concerned that there was
4 not the analysis of the environmental benefits of
5 some of the alternative fuel technologies. I
6 realize now that there is some of that emissions
7 benefit analysis done in Dan's options report, so
8 I am not going to raise that issue here today. I
9 am simply going to look at what was done in Dan's
10 report.

11 I think I do share some of the concerns
12 that I believe the committee was expressing with
13 regard to the AB 2076 analysis that kind of mashes
14 a lot of factors together, you know, consumer
15 costs, government revenues, these monetized values
16 for emission reductions kind of pushes all into
17 something that is very very difficult for
18 stakeholders to figure out and kind of pushes you
19 into a situation where now you are worried about
20 the assumptions, and you end up kind of arguing
21 about the assumptions and how they impact the
22 results. Let me just kind of stop on that
23 comment.

24 Let me turn to the assessment of the
25 policy recommendations. Staff says that none of

1 the stakeholders made an especially bold proposal,
2 and I do take that as a challenge and maybe some
3 of the recommendations that I put forward today
4 will meet that criteria. However, I thought that
5 at least a couple of my earlier recommendations to
6 you were if not bold would at least be found to
7 make a significant contribution to the
8 Commission's adopted goals for petroleum
9 displacement.

10 My first recommendation that was made
11 earlier to you was that the Energy Commission
12 should develop what I call the California
13 Transportation Fuel Strategy and Implementation
14 Plan which provides a detailed road map describing
15 how California can and will achieve its adopted
16 goals for reduction of petroleum use.

17 Let me explain this a little more in
18 case it was misunderstood last time. This is not
19 what is described in the first box of the staff's
20 summary stakeholder recommendations which is on
21 Page 29, Table 17. That first line there says,
22 "Adopt clear state policy for petroleum
23 reduction."

24 I think there is a clear state policy
25 for petroleum reduction. You have adopted it, the

1 ARB has adopted it. EI, I probably would like to
2 see it in statute, but that is not what I think is
3 the most important thing. I think we need a
4 detailed plan which is going to show us or give us
5 the road map on how to actually achieve those
6 reductions.

7 I brought with me today this document.
8 This is the state implementation plan for air
9 quality, and I guess I just wanted to use this as
10 an example. This is what we need for petroleum
11 reduction. The reason this is so large is because
12 it contains literally hundreds of little actions
13 that add up to a large plan that achieves the
14 state's air quality goals.

15 It affects thousands and thousands of
16 technologies, and this is really what we need. I
17 guess I am kind of a little worried that we are
18 going to end up at the end of this process similar
19 to where we were two years ago where we have very
20 good staff work on scenarios that show us that
21 achieving these goals is technically possible. We
22 still have the goals, but there is nothing in
23 between that says, well, how are we going to
24 actually get from those scenarios to those goals.
25 That is what the state implementation plan for air

1 quality does, and that is what I think we need for
2 petroleum reduction.

3 PRESIDING MEMBER GEESMAN: I think that
4 at least the course the Legislature seems on, and
5 at least the Senate would be that upon reflection,
6 our staff and perhaps commissioners are
7 insufficiently aggressive in this area, and that
8 is a task best handled for state government by the
9 air quality regulators.

10 You know, I would be hard pressed to
11 differ with that, so I suspect that Mr. Sparano is
12 successful in bottling up that legislation, or if
13 for other reasons it does not go forward, without
14 some particular super human effort here, we are
15 quite likely to end up exactly where we were two
16 years ago. Great scenarios, good slogans, but no
17 real concrete plan to address these problems.
18 Thank you for reminding us of that, and I would
19 ask you and your colleagues in your industry to
20 continue to remind us and other policy makers of
21 that void.

22 MR. MODISETTE: Maybe just to kind of
23 follow onto a point that you made, there is a need
24 I think for the air quality agencies, those
25 charged with regulating air quality, those

1 agencies now charged with the reduction of
2 greenhouse gas emissions which is you know the
3 ARB, the PUC, and whatever additional agencies are
4 mentioned in the governor's announcement on June 1
5 and energy agencies to work cooperatively I think
6 on this issue because these issues are really
7 inextricably tied.

8 I for one don't think you can solve one
9 without solving all three at the same time, so I
10 think the agencies need to get together with some
11 kind of structure or MOU or something to produce a
12 document that is like this, and maybe actually
13 start here. Maybe you start with inter-quality
14 document and you add greenhouse gas reduction and
15 petroleum reduction to that.

16 In fact, I actually think that might be
17 a good place to start because all of the petroleum
18 using vehicles are in this document. They are all
19 here.

20 PRESIDING MEMBER GEESMAN: That would
21 seem to be where the regulator leverage lies. I
22 think we have an important input to that process,
23 don't get me wrong, but I think ultimately it is
24 the air quality regulatory system that ends up
25 driving it.

1 MR. MODISETTE: Having said that, I
2 think we would also recommend and have recommended
3 that actions to implement the Energy Commissions
4 petroleum reduction goals do become a specific
5 chapter in the next energy action plan, at least
6 those things that you have control over or that
7 the PUC has control over. I actually think it
8 might be a good idea to invite the participation
9 of CAL EPA or the ARB in that process and forum as
10 well.

11 That, I think, would be a very large,
12 very good first step towards this kind of a
13 process.

14 We would also recommend that the role
15 and activities of utilities related to low
16 emission vehicles and fuels be revisited by both
17 the Energy Commission and the Public Utilities
18 Commission consistent with Public Utilities Code
19 740.3. A recent decision by the PUC on low
20 emission vehicle programs and the recent climate
21 change on (indiscernible) of the two agencies.

22 PRESIDING MEMBER GEESMAN: I think that
23 is another point that needs reinforcement, Dave,
24 and the more you can do to reinforce that, the
25 more likely it is that it will stay in front of

1 us, and we will pay attention to it.

2 MR. MODISETTE: Now I am just going to
3 kind of tick down the additional stakeholder
4 recommendations which were listed on Table 17 with
5 a few comments on each.

6 The staff's second category is to
7 facilitate with other agencies on regulatory
8 barriers, and there should be a check here in the
9 electricity column because there are regulatory
10 barriers that act as a disincentive for electric
11 technologies to displace their gasoline or diesel
12 counterparts.

13 Let me give you just one example. In
14 the case of light duty vehicles, the ARB does
15 allow automobile manufacturers to use zero
16 emission vehicles to comply with their annual
17 fleet average emission standard for new vehicles.

18 In other technology categories, if a
19 manufacturer wants to produce zero emission
20 vehicles to meet their fleet average, they are not
21 allowed to do so. This includes forklifts,
22 airport grounds support equipment, tow tractors,
23 burden and personnel carriers, and other small
24 off-road equipment. There are many other examples
25 that I could cite, but that is the one that I

1 thought I would at least call to your attention.

2 Further, there is no credit given under
3 state air emission reduction regulations or
4 incentives that recognizes the benefits of those
5 technologies and fuels which reduce petroleum
6 dependence or reduce greenhouse gas emissions and
7 tries to reward those technologies.

8 If you are looking for a bold
9 recommendation, it would be for those agencies
10 that regulate or have programs involving one of
11 these three areas, criteria pollutant reductions,
12 greenhouse gas reductions, and petroleum
13 displacement to either encourage or require them
14 to consider the other two factors. Right now,
15 that is almost entirely absent.

16 The third category is to fund additional
17 research and development. This is something that
18 is very technology specific, there are a lot of
19 electric technologies which need no further R & D
20 work. There are some such as plug-in hybrids
21 which do. In fact, we would probably specifically
22 recommend that the Energy Commission become a full
23 partner in the plug-in hybrid vehicle consortium
24 that includes EPRI and Daimler Chrysler and the
25 Federal Department of Energy.

1 We also think that there is probably
2 some additional work which the Commission could
3 participate in, in terms of battery storage
4 technologies, also inventory of electric
5 technologies.

6 You know, the ARB has extensive
7 inventory of internal combustion engine equipment,
8 but almost no inventory of zero emission
9 equipment.

10 Lastly, we do think that there is a need
11 for additional R & D on load management and energy
12 efficiency equipment related to these electric
13 transportation technologies.

14 On the incentives for a Moyer type
15 program, which is one of the staff
16 recommendations, I think that is a good
17 recommendation. We would support that, but I
18 think there is something that could be done in the
19 near term as well, and that would be to add to the
20 existing Moyer program some kind of a factor. I
21 think the ARB refers to it as an ad for petroleum
22 displacement.

23 I've actually suggested this to the ARB
24 staff in a public workshop a couple of weeks ago
25 and that is that they provider adders for

1 reduction in petroleum, and adder for low upstream
2 emissions because right now that is not included,
3 and also an adder for reduction in greenhouse gas
4 emissions.

5 ARB staff thinks they can do that. They
6 can't obviously change the grant amount or the
7 cost effectiveness criteria. We are not asking
8 for that, but we are asking for some kind of adder
9 or consideration for those technologies that
10 provide benefits outside of what the Moyer program
11 regulates which is NOX and ROG and now particulate
12 matter.

13 The next category is lack of available
14 products. Again, for some technologies, there is
15 no problem with products. In the case of plug-in
16 hybrids, and again, I think we would like to see
17 the Commission work on incentives, either
18 financial incentives or regulatory incentives to
19 try to encourage manufacturers to bring those
20 products to market.

21 One obvious one might be that the ARB
22 with the Energy Commission's encouragement could
23 provide partials of credits for the actual ZEV
24 miles achieved with plug-in vehicles. Right now
25 that is not allowed, they are constrained to a

1 lesser category, the same category as engine
2 dominant hybrids. In that category, there is
3 absolutely no incentive for manufacturers to
4 produce those vehicles or for California to get
5 the benefits from those vehicles.

6 That is really the end of my
7 recommendations. I think I would like to see the
8 Commission continue to work with these multi-
9 agency groups, multi-stakeholder groups, that has
10 been very very helpful and effective. We would
11 like to continue working within that structure and
12 with the other agencies to produce this kind of a
13 road map which we think is really the key to the
14 success of your adopted goals.

15 Thank you very much, and I would be
16 happy to answer any questions.

17 PRESIDING MEMBER GEESMAN: You mentioned
18 plug-in hybrids a couple of times and seem to
19 allude to a working group that currently exists?

20 MR. MODISETTE: There is no working
21 group on plug-in hybrids. I actually think that
22 there should be. I think that one of the things
23 that is missing in the plug-in hybrid arena is
24 some kind of a forum for the stakeholders to get
25 together. There are these little kind of diverse

1 activities that are happening at EPRI, with some
2 automobile manufacturers, but for the most part,
3 the agencies, meaning the energy agencies and the
4 air agencies, are outside of that structure. I
5 really think it would be beneficial for there to
6 be formation of a plug-in hybrid and electric
7 vehicle working group.

8 PRESIDING MEMBER GEESMAN: We had some
9 pretty good testimony on that I guess it was
10 December now, and I think that does merit follow
11 up. Thanks a lot, Dave.

12 MR. FONG: Commissioner Geesman, I did
13 want to address one of Mr. Modisette's issues. We
14 did take full advantage of his offer to provide us
15 with assistance. There is a section in the
16 addenda which will be posted hopefully this
17 evening or tomorrow that provides much of the
18 analysis or at least from a potential petroleum
19 reduction quantity for the off-road sector.

20 We make mention of it in the options
21 report where at the low end, if off-road vehicles
22 were to switch to non-petroleum fuel, they might
23 displace anywhere from 22 million gallons a year
24 all the way up to 1.1 billion gallons a year. So,
25 at the higher end, it is roughly 5 percent of our

1 on-road gasoline and diesel based upon our
2 forecast assuming a greenhouse gas emission
3 standard is in place.

4 So, it is a relatively large amount of
5 fuel. The difficulty we found in trying to
6 rigorously evaluate that option is that as Dave
7 said, there are virtually hundreds of different
8 potential niche applications where those electric
9 propane CNG perhaps other alternatives would fit
10 into these off road applications.

11 For us to do what I felt was a competent
12 evaluation in the manner that we did the other
13 petroleum reduction options, we would need a lot
14 more data and information. We hope to do that,
15 not perhaps in this energy report cycle, but
16 certainly if we have the resources, we are going
17 to take a much harder look at that option. We do
18 really appreciate your assistance in this.

19 PRESIDING MEMBER GEESMAN: My last blue
20 card is Lewis Lem from AAA.

21 MR. FONG: He must have got in his car
22 and left.

23 PRESIDING MEMBER GEESMAN: I was going
24 to ask him what his price experience on gasoline
25 this year had been.

1 Okay, is there anybody else in the
2 audience that cares to address us. Come on up
3 again, Jim.

4 MR. VAN BOGART: I have one last comment
5 that I failed to -- I think one of the more
6 positive things that has come from these
7 workshops, some of the industry stakeholder
8 partners over the last six or seven months, and
9 Mike kind of alluded to this, Mike Eaves earlier.
10 We got together and we kept saying that
11 (indiscernible) is the choir and we are singing
12 the same song. It really comes down to how are we
13 going to fund this, and how are we going to make
14 this happen.

15 This idea of a penny a gallon, it is not
16 a new idea, but it is a good idea, and it has
17 gotten some legs, and we have gotten together
18 formally and formed up a draft proposal, and I
19 think we will see that go forward in the next six
20 months. That is a direct result of what the
21 Energy Commission is doing through these
22 workshops.

23 I just kind of wanted to add that, that
24 this is a very valuable thing that you guys are
25 doing for the industry. I just wanted to add

1 that.

2 PRESIDING MEMBER GEESMAN: Thank you.

3 Joe, are you still in the room, Joe Sparano? I

4 thought of another thing to add to my concerns.

5 This doesn't directly require a response, but I

6 thought of another thing to add to my concerns

7 about our forecast and the impact on

8 infrastructure. That is the way in which we treat

9 Arizona and Nevada growth and demand.

10 MR. SPARANO: Yeah, you mentioned it

11 yesterday. It is very important the amount of

12 product that we supply to both those states is

13 perhaps not -- it is not as significant as what we

14 use here, but it is significant in the context

15 that all must pass through our systems whether it

16 is refinery generated or across a dock because

17 someone has chosen to import components to make

18 the grades of gasoline.

19 We saw two years ago that a disruption

20 on the east end of the Arizona line, which

21 supplies about 30 percent changed the whole

22 dynamic of our marketplace when our refiners in

23 Southern California upped their contribution to

24 Arizona to make up for that lack of supply, and it

25 had a compounding effect here. I think your point

1 is spot on, and Nevada is the same.

2 Longhorn pipeline may be something to
3 help balance what you just said, the need to
4 monitor the growth in those states and with us as
5 a supplier, California. If Longhorn pipeline's
6 capability is able to be realized -- by that, I
7 mean if Kinder Morgan gets the permits and they
8 are able to construct new line segments from El
9 Paso to Tucson and Tucson to Phoenix, then that
10 will allow a very large amount of gasoline to be
11 produced in the Gulf Coast and transported into
12 Phoenix which has the potential to back gasoline
13 back into California which again is a positive as
14 far as that supply/demand imbalance that we talked
15 about.

16 PRESIDING MEMBER GEESMAN: Any other
17 comments from anyone.

18 Okay, thank you for hanging in there for
19 a very long day, but a productive day. We will e
20 adjourned.

21 (Whereupon, at 4:33 p.m., the workshop
22 was adjourned.)

23 --oOo--

24

25

CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter,
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